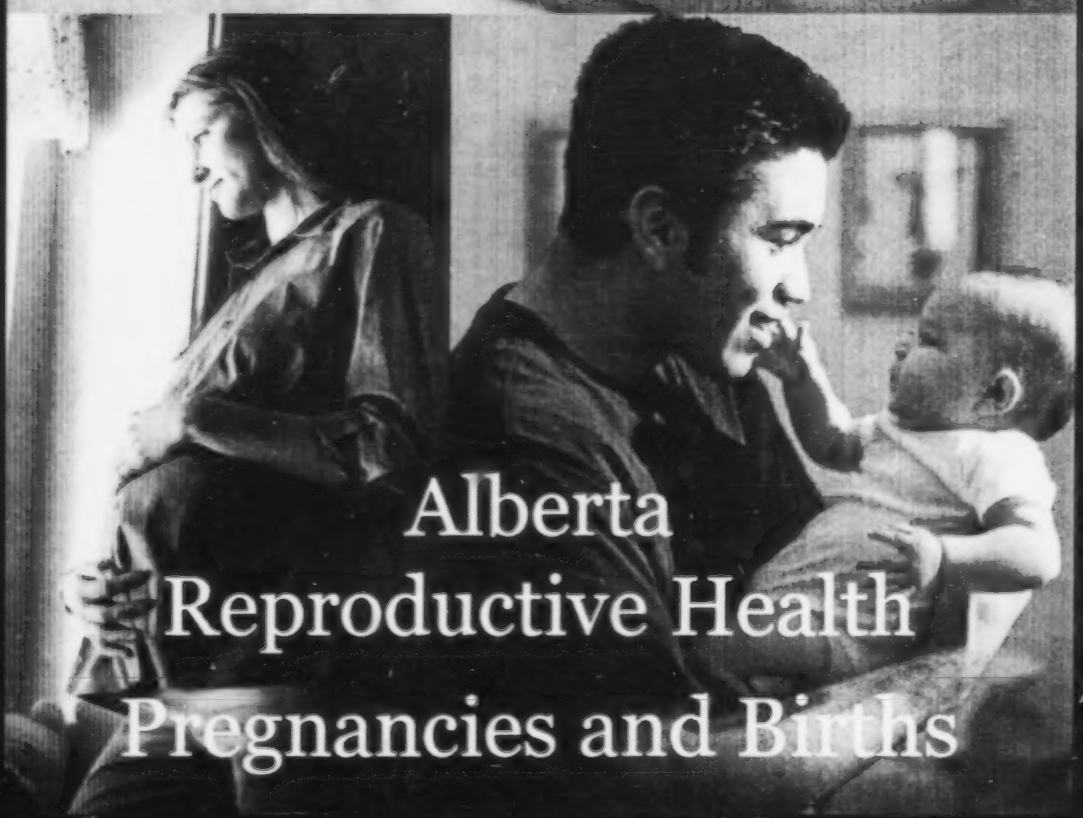

Alberta Reproductive Health Pregnancies and Births

REPORT

Alberta
HEALTH AND WELLNESS

Alberta Perinatal Health Program

2004

Suggested citation: Reproductive Health Report Working Group. *Alberta Reproductive Health: Pregnancies and Births 2004*. Edmonton, AB: Alberta Health and Wellness.

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ISSN 1712-0780 Alberta reproductive health : pregnancies and births :report (Print)

ISSN 1712-0845 Alberta reproductive health : pregnancies and births :report (Online)

105-07367/

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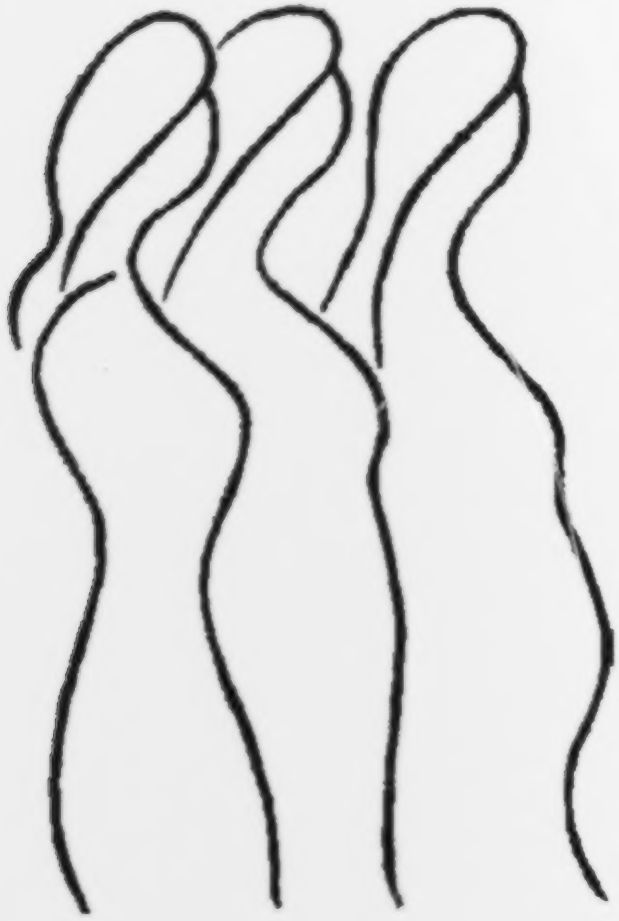
Executive Summary



Contents

This report follows the 2002 Alberta Reproductive Health: Pregnancies and Births report. This report is based on data for the 15-year period from 1988 to 2002, and includes new Alberta data for 2001 and 2002.

Data are provided on the following topics:

- estimated pregnancies
- spontaneous abortions
- induced abortions
- procedures related to delivery
- maternal age
- maternal prenatal morbidity
- maternal prenatal behaviours
- fertility rates
- live births
- birth weight
- preterm births
- multiple births
- infant morbidity
- stillbirths
- mortality (perinatal, neonatal, infant, and maternal)
- maternal postnatal behaviour (breastfeeding)

Returning to the report this year are episiotomy rates (in Deliveries). Episiotomy rates last appeared in the April 1999 report.

Appendix 5 contains a resource list of relevant Internet sites.

Wherever possible and appropriate, data are broken down by regional health authorities (RHAs), age groups, time periods, and risk factors. "Residence RHA" refers to the regional health authority in which the mother resided at the time of the relevant event, and "Facility RHA" refers to the regional health authority where the relevant event occurred. RHA boundaries changed in April 2003; all analyses reflect these new boundaries.

Data Sources

Data sources include

- Vital Statistics
- Alberta Health and Wellness Administrative databases
- hospital statistics reported to the Alberta Medical Association Reproductive Care Committee
- case information from the hospital health records departments and offices of the medical examiners
- the Northern and Central Alberta Perinatal Outreach Program
- the Southern Alberta Perinatal Outreach Program
- Statistics Canada publications
- Health Canada publications

Overview

Reproductive health in Alberta remains in a state of change. While fertility rates appear to be leveling off in the new millennium after more than a decade of steady decline, many other indicators of reproductive health continue to reach new highs and lows.

In 2002, the cesarean section rate was the highest it has been in 15 years. During that year, almost one out of every four deliveries was by cesarean section.

Mean maternal age reached a new high in 2002, at 28.9 years.

High pre-pregnancy weight (over 91 kg) is common in Alberta.

Pregnancies

Estimated Pregnancies

The estimated pregnancy rate stabilized from 2000 to 2002 after declining for several years. The 2002 rate was 64.6 estimated pregnancies per 1,000 women aged 15-49.

Spontaneous Abortions

Spontaneous abortion rates per 1,000 women aged 15-49 also stabilized between 2000 and 2002 after a period of decline; the 2002 rate was 5.6. The proportion of estimated pregnancies that ended in spontaneous abortion declined after peaking in the mid 1990s.

Reproductive Care Services

Induced Abortions

In 2002, 19.6% of estimated pregnancies ended in induced abortion. The induced abortion rate per 1,000 women aged 15-49 peaked in 1997 and 1998, decreased in 1999, and then stabilized.

Deliveries

Induction of labour occurred in 25.7% of live births in 2002. Labour induction rates are following an increasing trend.

Epidural analgesia rates continue to rise, with an epidural analgesia rate of 38.6 (per 100 hospital deliveries) in 2002.

Cesarean section rates reached a new high of 23.2 (per 100 hospital deliveries) in 2002. Use of forceps declined to 5.3 (per 100 hospital deliveries) in 2002, while use of vacuum extraction increased to 11.3.

Maternal Factors

Maternal Age

Mean maternal age has not yet leveled off. The average age at childbirth was 28.9 years in Alberta in 2002, continuing a long-standing increasing trend. Mean maternal age increased by 1.3 years between 1988 and 2002.

Maternal Prenatal Morbidity

Prenatal morbidity data were summed across 2000 to 2002.

One out of every 12 women (8.1%) had a pre-pregnancy weight of more than 91 kilograms.

Other pre-pregnancy conditions (including pre-existing diabetes, heart disease, pre-existing hypertension, and chronic renal disease) were rare, each affecting less than 1% of delivering women.

Bleeding in pregnancy prior to 20 weeks gestation was reported in 5.1% of women giving birth. About half that number of women (2.6%) reported bleeding at or after 20 weeks.

5.2% of delivering women were reported to have gestational hypertension.

Gestational diabetes was a factor for 1 out of every 30 women (3.3%). Gestational diabetes was more common in older mothers.

Maternal Prenatal Behaviours

Maternal prenatal smoking is declining in Alberta, but remains high at more than one out of every five pregnant women.

In 2002, 22.1% of Alberta women who gave birth to live infants reported smoking at some point during pregnancy. This rate decreased with time; in 1997, the smoking rate was 26.7%. The 2002 rates for alcohol consumption and street drug use were 4.0% and 2.2%, respectively. The reported rate of alcohol consumption decreased between 1997 and 2002, while the rate of street drug use increased.

Lower birth weights and shorter gestations were associated with smoking, drinking alcohol, and (particularly) street drug use during pregnancy.

Mothers who engaged in these risky behaviours tended to be three to five years younger on average than mothers who did not engage in the behaviours.

Almost two-thirds of women attended prenatal classes prior to their first live birth.

Prenatal classes were attended by 63.0% of women having a first live birth in 2002. This rate did not vary from 1997 to 2002. Prenatal class attendance prior to first birth was associated with higher maternal age, and with lower low birth weight rates for term births.

Births

Fertility Rates

After many years of steady decline, fertility rates in Alberta appear to be leveling off.

Fertility rates have stabilized in Alberta after years of decline.

The general fertility rate (number of live births per 1,000 women aged 15-49 in a given year) was 46.0 in 2002, while the total fertility rate (number of live births per 1,000 women aged 15-49 over a lifetime) was 1,686. Both of these rates were essentially stable between 2000 and 2002.

Women aged 25 to 29 had the highest fertility rates, though fertility in this age group was stable from 2000 to 2002. Fertility rates continued to increase for women aged 30 to 44 years during that time period.

Live Births

Live births increased in Alberta in 2001 and 2002. This occurred against a backdrop of increasing population, with the end result of stabilization of the crude birth rate between 2000 and 2002. The crude birth rate in 2002 was 12.4 (live births per 1,000 population), compared with 16.7 in 1988.

Birth Weight

The small-for-gestational-age rate reached a 15-year low in 2002, at 7.6 (per 100 live singleton (single infant) births), while the low birth weight rate reached a new high at 6.5 (per 100 live births). Many low birth weight births are preterm births, and the small-for-gestational-age rate decrease was limited to term births. Small-for-gestational-age births occur more often with mothers under 25 years of age or over 39 years of age.

In 2002, the small-for-gestational age rate for term births reached a new low point. The low birth weight rate was high, in part due to preterm births.

The large-for-gestational-age rate was 12.1 (per 100 live singleton births) in 2002. This rate was stable from 2000 to 2002; previous to that, the rate showed an increasing trend.

In 2002, 12.5 out of every 100 liveborn infants weighed more than 4,000 grams. The high birth weight rate was highest for mothers in their 30s.

Preterm Births

The preterm birth rate was the highest in 15 years in 2002, at 8.6 (per 100 live births). Prematurity is associated with many negative birth outcomes, and this rate merits careful assessment. Preterm births are often also low birth weight births and/or multiple births.

The preterm birth rate reached a new high at 8.6% of live births in 2002.

Preterm births are more common for mothers under 20 years of age and 35 years and older.

Multiple Births

The multiple birth rate continues to increase. The 2002 rate was 3.2 (per 100 live births).

There are increasing numbers of multiple births in Alberta. In 2002, more than three out of every 100 births was a multiple birth.

Mothers aged 35 to 39 years had a multiple birth rate that was more than three times that of mothers under the age of 20.

The majority of mutiple births are low birth weight and/or preterm.

Infant Morbidity

The rate of respiratory distress syndrome was 2.1 (per 100 hospital deliveries) for 2001 and 2002 combined.

Congenital anomalies occurred in 34.1 out of every 1,000 total births in Alberta in 2002. From 1995 to 1999, the rate stabilized and increased slightly from 2000 to 2002. The risk of congenital anomaly is highest for babies born to mothers aged 40 and older.

Mortality

Stillbirths

The rate of stillbirth was 6.5 (per 1,000 total births) in 2002; this rate did not change significantly between 1988 and 2002

In Alberta, the stillbirth rate is less than 1% and does not vary much from year to year.

Stillbirths are more common for teenage mothers and mothers aged 35 and older.

Between 1988 and 2002, 74.0% of stillbirths were low birth weight, and 73.7% were preterm.

The stillbirth rate is more than three times higher for multiple births than for singleton births.

Perinatal and Neonatal Mortality

The perinatal mortality rate for 2002 was 11.0 (per 1,000 total births). When limited to birth weights of 500 grams or more, the rate was 6.9.

About five out of every 1,000 newborns died before the age of 28 days in Alberta in 2002.

The neonatal mortality rate (per 1,000 live births) was 5.3 in 2002 for all births, and 3.6 when limited to birth weights of 500 grams or more.

Perinatal and neonatal deaths decrease markedly with increasing birth weight and gestational age.

Teenage mothers and especially mothers aged 40 and older have elevated perinatal and neonatal mortality rates.

Low birth weight, prematurity, and congenital anomalies are associated with many perinatal and neonatal deaths.

Post-Neonatal Mortality

The post-neonatal mortality rate for 2002 was 2.0 (per 1,000 live births). This rate decreased from 1988 to 1994 and has been relatively stable since 1995.

About seven out of every 1,000 infants died before reaching one year of age in Alberta in 2002.

Infant Mortality

Infant mortality declined from 1988 to 1998, but since then has begun to increase. The 2002 rate of 7.2 (per 1,000 live births) is the highest since 1994.

Infant mortalities are consistently more common in male infants than in female infants. In 2002, the infant mortality rate was 7.4 for males and 7.1 for females.

Maternal Mortality

The maternal mortality rate is low in Alberta, and decreased significantly between 1970 and 2002 (most of the decrease occurred between 1970 and 1973). Since 1991, there have been two or fewer maternal deaths directly related to pregnancy each year.

Each year in Alberta, less than one in 10,000 live births results in a maternal death directly related to pregnancy.

In 2002, there were six maternal deaths. One was classified as directly related to pregnancy, childbirth or the puerperium and the other 5 were unrelated but occurred during pregnancy or within 90 days post-pregnancy.

Maternal Factors

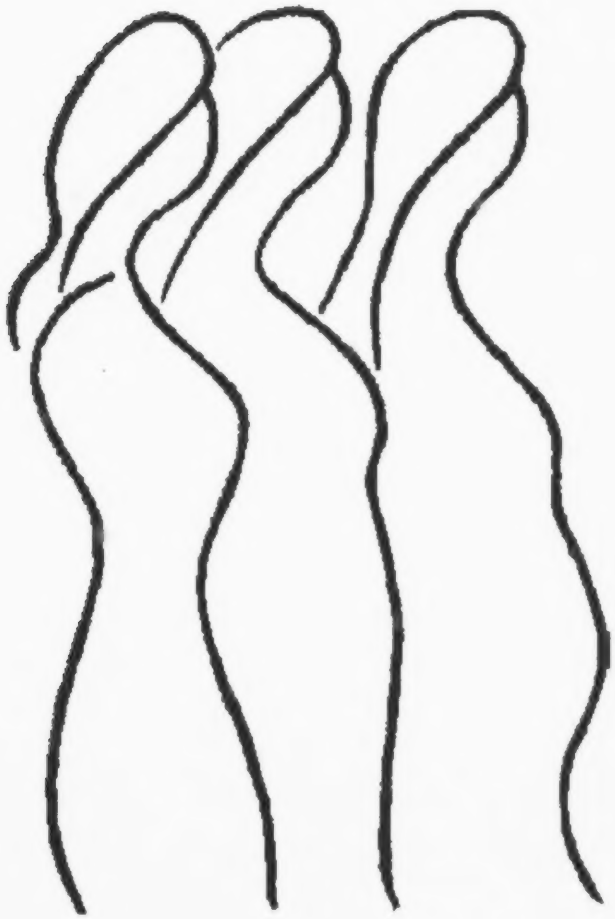
Maternal Postnatal Behaviours

The breastfeeding initiation rate was 86.2 (per 100 women delivering) in 2002. This rate showed a small increase from 1996 to 2000 but remained unchanged from 2000 to 2002.

More than 86% of Alberta newborns are being breastfed at discharge from hospital after birth.

For further information on any aspect of the report, please contact the Health Surveillance Branch of Alberta Health and Wellness, or the Alberta Medical Association Reproductive Care Committee.

Introduction



Contents

This report on the reproductive health of Albertans is the product of close collaboration between Alberta Health and Wellness, the Alberta Medical Association, the Northern and Central Alberta Perinatal Outreach Program, and the Southern Alberta Perinatal Outreach Program.

Data consist of pregnancy and birth data primarily for the calendar years 1988 to 2002, including:

- spontaneous abortions
- induced abortions
- operative deliveries and induction of labour
- epidurals in labour (1998 to 2002 only)
- maternal age
- maternal prenatal morbidity (2000 to 2002 only)
- maternal prenatal behaviours (2000 to 2002 only)
- live births
- birth weight
- preterm births
- multiple pregnancies and births
- infant morbidity (2000 to 2002 only)
- stillbirths
- perinatal, neonatal, and infant mortality
- maternal mortality (1970 to 2002)
- maternal postnatal behaviours (i.e., breastfeeding initiation) (1996 to 2002 only)

Appendix 5 contains a resource list with Internet addresses for related reports and websites.

Data Sources

- Department of Government Services
  - Vital Statistics Birth Registration Files
  - Vital Statistics Death Registration Files
  - Vital Statistics Stillbirth Registration files
- Alberta Health and Wellness
  - Clinic Files
  - Canadian Institute of Health Information Inpatient Files
  - Fee-for-Service Claims Files
  - Ambulatory Care Classification System
  - Alberta Health Care Insurance Plan Stakeholder Registration File
- Alberta Congenital Anomalies Surveillance System
- Alberta Medical Association Reproductive Care Committee
- Reports from follow-up clinics for neonates and infants
- Northern and Central Alberta Perinatal Outreach Program
- Southern Alberta Perinatal Outreach Program
- Statistics Canada publications
- Health Canada publications

Methodology and Limitations

National comparisons are made throughout the report whenever national data are available.

Caution should be used in interpreting rates based on small numbers of cases.

- Only Alberta residents are included in analyses unless otherwise stated.
- Regional data (by regional health authorities) are provided where appropriate. Some data are broken down by relevant factors such as maternal age or birth weight groupings.
- National comparisons are made where possible. At the time of preparation of this document, national data were available to the end of 2002 or earlier. Where Canada and Alberta data are compared, a single data source (Statistics Canada or Health Canada) is used to ensure that data collection and extraction are consistent. The Alberta data used in these comparisons may be different from that provided in other analyses that do not involve national comparisons.
- Statistical analyses are mainly descriptive, including frequencies, rates, percentages, and means. Regional differences are interpreted in terms of standard errors and confidence intervals.
- With rare events (such as stillbirths) or detailed break-downs (such as live births by age group of mother, RHA, and year), rates may be based on small numbers, which reduces their statistical reliability. Caution should always be exercised in interpreting these rates. Data are often combined across three-year periods (such as 2000 to 2002) in order to increase reliability of rates.
- In some cases, linear or quadratic, and cubic effects are described. Linear effects refer to a straight-line relationship between two variables (either an increasing or a decreasing trend). Quadratic and cubic effects are non-linear. The relationship between two variables in this case is captured by a second-order (quadratic) or third-order (cubic) polynomial. A quadratic function results in a curve with one change of direction, for example a decrease followed by an increase (a U-shaped curve). A cubic function results in a curve with two changes of direction, for example an increase, followed by a decrease, followed by an increase.
- Live birth and some stillbirth statistics are derived from Vital Statistics Birth Registration Files. Registration of births in Alberta is a legal requirement, and the files are believed to be virtually complete. Births and stillbirths to non-Alberta residents occurring in Alberta have been excluded, except where otherwise mentioned.
- Information on post-neonatal and infant deaths is derived from Vital Statistics Death Registration Files. Registration of deaths in Alberta is a legal requirement, and the files are believed to be virtually complete. Deaths to non-Alberta residents occurring in Alberta have been excluded.

- The Alberta Medical Association, through the Reproductive Care Committee, reviews cases of perinatal, neonatal and maternal mortality. Case information is received from the health records departments of Alberta hospitals, hospital perinatal review committees, offices of medical examiners, vital statistics, and physicians. The Committee is designated by Ministerial Order to provide this service. Collaboration and cooperation from health records staff, hospital perinatal review committees and office of medical examiners help to ensure that case information is complete. Variables from case reviews are entered into a mortality database and form the basis for the mortality analysis part of this report. A validation process with Vital Statistics, Alberta Health and Wellness and health records departments ensures that all cases are received for review.
- Populations used for the calculations of rates are derived from the Alberta Health Care Insurance Plan Registration Files. They are estimated at June 30, as viewed at December 31 of each year. Provincial rate calculations include Alberta residents with an "unknown" RHA code.
- Population figures used in calculations in this report are in Tables A100 and A101.
- Beginning with 2002 data, new coding systems for classification of diseases (International Statistical Classification of Diseases and Related Health Problems Tenth Revision, Canada (ICD-10-CA) 2003) and interventions (Canadian Classification of Health Interventions (CCI) 2003) are in use. For data prior to 2002 (and for some 2002 data) the International Classification of Disease – 9th Revision – Clinical Modification (ICD-9-CM)) Codes were used. Because the coding systems are not identical, there may be discrepancies between 2002 data and data for prior years. Comparisons of data coded with ICD-10-CA or CCI and those coded with ICD-9-CM should be undertaken with caution.
- Because of differences in definitions and dates of extracting data for analyses, the statistics in this report may not be the same as those previously published by Alberta Health and Wellness.

Effective 2002, a change in coding system for diseases and interventions occurred. Caution must be used in comparing 2002 data to data for prior years in some cases; look in " Data Sources" to see if this applies in a given section.

Time Trends for Major Indicators

The table below summarizes time trends for selected major indicators of reproductive health in Alberta for the 15-year period from 1988 to 2002. Included are 2002 rates, the lowest rate for the 15-year period (with the year in which the lowest rate occurred in parentheses), the highest rate (year in parentheses), and the linear trend that applies from 1988 to 2002.

Indicator	2002 Rate	Lowest Rate (Year)	Highest Rate (Year)	Linear Trend for 1988 to 2002[1]
Induced Abortion Rate (per 1,000 women aged 15-49)[1,2]	12.7	8.0 (87)	13.6 (97)	Increasing
Total Induction Rate (per 100 hospital deliveries)[3]	19.3	12.0 (88)	27.0 (01)	Increasing
Cesarean Section Rate (per 100 hospital deliveries)[3]	23.2	15.7 (94)	23.2 (02)	Increasing
Mean Maternal Age at Delivery[4]	28.9	26.7 (86)	28.9 (02)	Increasing
General Fertility Rate (per 1,000 women aged 15-49)[2,4]	46.0	45.6 (00)	63.6 (86)	Decreasing
Total Fertility Rate (per 1,000 women)[2,4]	1,686	1,660 (00)	1,876 (89)	Decreasing
Crude Birth Rate (per 1,000 population)[2,4]	12.4	12.3 (00)	17.7 (86)	Decreasing
Low Birth Weight Rate (per 100 live births)[4]	6.5	5.5 (86, 87)	6.5 (02)	Increasing
High Birth Weight Rate (per 100 live births)[4]	12.5	10.7 (88)	12.9 (00)	Increasing
Pre-Term Birth Rate (per 100 live births)[4]	8.6	6.3 (86)	8.6 (02)	Increasing
Multiple Birth Rate (per 100 live births)[4]	3.2	1.9 (86)	3.2 (02)	Increasing
Congenital Anomalies Rate (per 1,000 total births)[4,5,6]	34.1	31.1 (99)	48.5(90)	Decreasing
Stillbirth Rate (per 1,000 total births)[4,6]	6.5	5.0 (98)	7.3 (91)	No trend
Perinatal Mortality rate (per 1,000 total births)[4,6,7]	10.6	7.7 (98)	10.8 (90,95)	No trend
Neonatal Mortality Rate (per 1,000 live births)[4,7]	5.2	3.4 (91,98)	5.2 (02)	No trend
Post-Neonatal Mortality Rate (per 1,000 live births)[4,7]	2.0	1.4 (97)	4.0 (86)	Decreasing
Infant Mortality Rate (per 1,000 live births)[4,7]	7.2	4.9 (97)	8.9 (86)	Decreasing

Sources:

1. Clinics Files, Alberta Health and Wellness.
2. Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.
3. Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.
4. Vital Statistics, Birth File, Department of Government Services, January 2004 release.
5. Alberta Congenital Anomalies Surveillance System, 1980-2002, February 2004 release.
6. Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.
7. Vital Statistics, Death File, Department of Government Services, January 2004 release.

Notes:

1. "Trend" refers to whether a statistically significant linear trend is present in the data for 1988 to 2002.

Populations are estimated at June 30, as viewed at December 31 of each year.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

National Comparisons

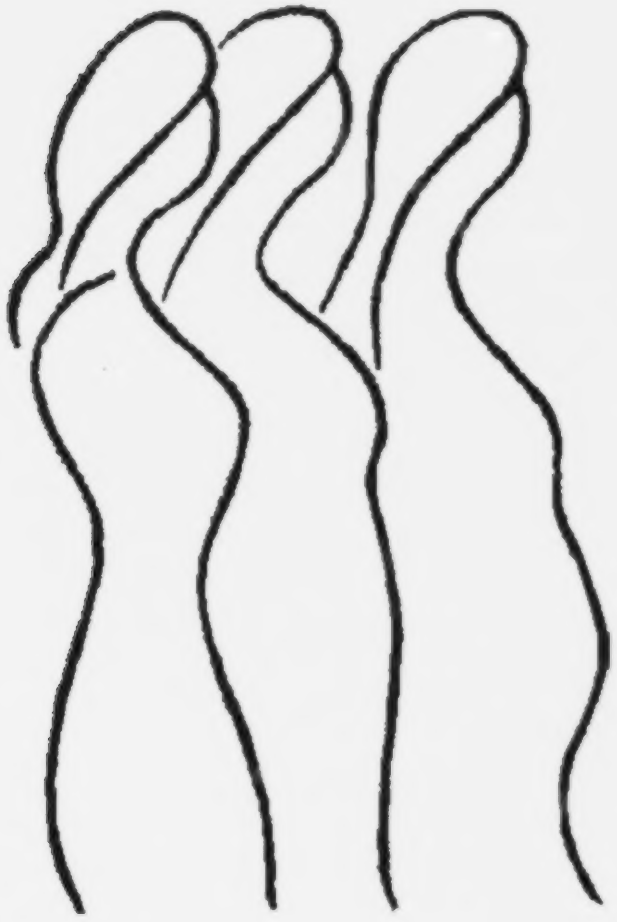
Shown in the table below are selected Canada and Alberta indicators for the most recent year available. Data sources for this table are Statistics Canada and Health Canada publications only, to ensure consistency of data definitions and extraction methods.

Indicator	Canada	Alberta	Year
Induced Abortion Rate (per 1,000 women aged 15-44)[1]	15.6	15.1	2001
Cesarean Section Rate (per 100 hospital deliveries)[2]	21.2	20.9	2000/01 fiscal
Medical Induction of Labour (per 100 hospital deliveries)[2]	19.7	23.5	2000/01 fiscal
Episiotomy Rate (per 100 hospital deliveries)[2]	23.8	20.4	2000/01 fiscal
Mean Maternal Age at Delivery (years)[3]	29.5	28.9	2002
Total Fertility Rate (per 1,000 women)[3]	1,501	1,689	2002
Crude Birth Rate (per 1,000 population)[3]	10.5	12.4	2002
Mean Live Birth Weight (grams)[3]	3,403	3,380	2002
Low Birth Weight Rate (per 100 live births)[3]	5.7	6.5	2002
High Birth Weight Rate (per 100 live births)[3]	13.2	12.5	2002
Pre-Term Birth Rate (per 100 live births)[3]	7.5	8.6	2002
Multiple Birth Rate (per 100 live births)[3]	2.9	3.2	2002
Respiratory distress syndrome Rate (per 1,000 hospital live births)[2]	11.6	13.1	2001 to 2002
Down Syndrome Rate (per 10,000 total births)[4]	14.0	10.9	1997 to 1999
Stillbirth Rate (per 1,000 total births)[3]	6.1	6.4	2002
Perinatal Mortality rate (per 1,000 total births)[5,6]	9.2	9.1	2001
Neonatal Mortality Rate (per 1,000 live births)[5]	3.8	3.8	2001
Post-Neonatal Mortality Rate (per 1,000 live births)[5]	1.4	1.8	2001
Infant Mortality Rate (per 1,000 live births)[5]	5.2	5.6	2001

Sources:

1. Statistics Canada, *Induced Abortions tables* (http://www.statcan.ca/english/Pgdb/health41a.htm).
2. Health Canada, *Canadian Perinatal Health Report, 2003*.
3. Statistics Canada, *Births 2002 Data Tables* (http://www.statcan.ca/english/freepub/84F0210XIE/2002000/index.htm).
4. Health Canada, *Congenital anomalies in Canada - A perinatal health report, 2002*.
5. Statistics Canada, *Deaths 2001 Data Tables* (http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE).
6. Statistics Canada, *Births 2001 Shelf Tables*.

Pregnancies



Estimated pregnancies

Introduction

Although many miscarried pregnancies go unreported to the health care system, we can estimate number of pregnancies occurring in a given year in Alberta by adding known spontaneous abortions, induced abortions, stillbirths, and live births.

Definitions

An **estimate of total pregnancies** in a given time period can be obtained by summing live births, stillbirths, spontaneous abortions, and induced abortions in that period.

Estimated pregnancy rate: Number of estimated pregnancies per 1,000 women between 15 and 49 years of age.

Background

Accurate pregnancy estimates are difficult to obtain. Very few live births, stillbirths, or induced abortions are unreported in Alberta. However, we cannot account for spontaneous abortions that have not been reported to physicians (whether physician care was not sought or the pregnancy went unnoticed). Pregnancies are therefore underestimated.

Estimates of intra-uterine mortality are available. According to one such estimate, of human eggs exposed to sperm, 69% are lost before birth: 16% fail to fertilize, and 53% of embryos are lost (47% in the first two weeks after fertilization, and 6% later than two weeks after fertilization) (Leridon, 1973, as cited in Racowsky, 2002).

Other estimates state that, of clinically recognized pregnancies, up to 30% end in spontaneous abortion (Hammerslough, 1992; The Alan Guttmacher Institute, 2000; Ventura, Curtin, & Mathews, 2000; Zinaman, Clegg, Brown, O'Connor, & Selevan, 1996).

Data Sources

- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.
- **Stillbirths**: Vital Statistics Stillbirth Registration files, Department of Government Services, January 2004 Release.
- **Spontaneous abortions**: Fee-for-Service Claims Files, Alberta Health and Wellness.
- **Other induced abortions**: Clinic Files, Alberta Health and Wellness.
- **Hospital induced abortions**: Fee-for-Service Claims Files, Alberta Health and Wellness.
- **Population estimates**: Alberta Health Care Insurance Plan Stakeholder Registration File, Alberta Health and Wellness.
- See the Methodology and Limitations section in the Introduction for a caution regarding comparison of 2002 Estimated Pregnancy data to data from prior years due to changes in data coding systems.

Estimated Pregnancies
Provincial Trends and Effects

Estimated pregnancy rates in Alberta are declining for women under 30 years of age, and increasing for women aged 30 to 44. Women aged 25-29 continue to have the highest pregnancy rate.

Figure 1

Estimated Pregnancy Rate, Alberta, 1988 to 2002

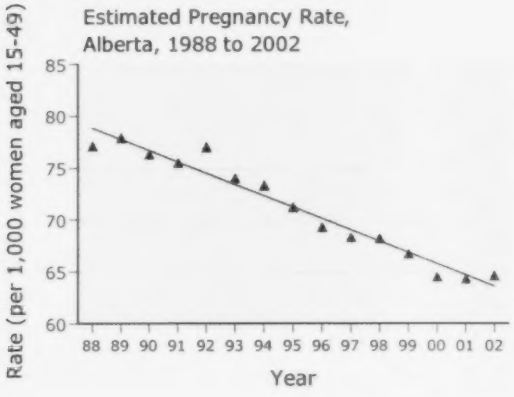
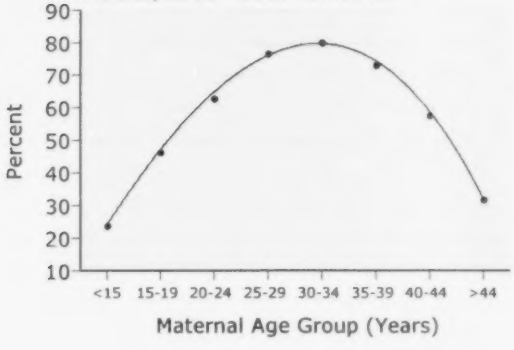


Figure 2

Estimated Pregnancies Ending in Live Birth, by Maternal Age Group, Alberta, 2000 - 2002 Combined



There were 53,769 **estimated pregnancies** in Alberta in 2002.

The **estimated pregnancy rate** (per 1,000 women aged 15-49) was 64.6 in 2002. This rate was stable from 2000 to 2002, after declining for many years previous to 2000 (see Table A1 and Figure 1).

Table A2 contains data on estimated pregnancy rates by **maternal age** group. Women aged 25-29 years continue to have the highest pregnancy rates of all age groups. Women aged 30-34 now have higher pregnancy rates than women aged 20-24. Pregnancy rates are declining for women under 30 and increasing for women aged 30 and older.

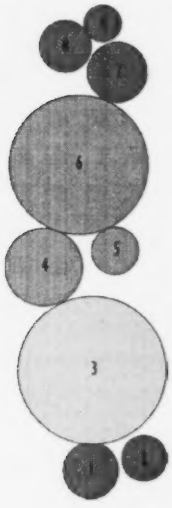
Women aged 20 to 34 years had more than three quarters (76.3%) of the estimated pregnancies in Alberta in 2002.

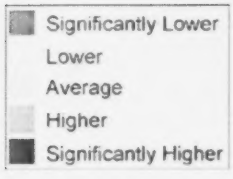
For 2000 to 2002 combined, 71.0% of estimated pregnancies ended in live birth. This percentage varied dramatically with maternal age. As shown in Figure 2, there is a significant quadratic effect of maternal age group on **percentage of estimated pregnancies ending in live birth**, with the youngest and oldest age groups having the lowest percentages.

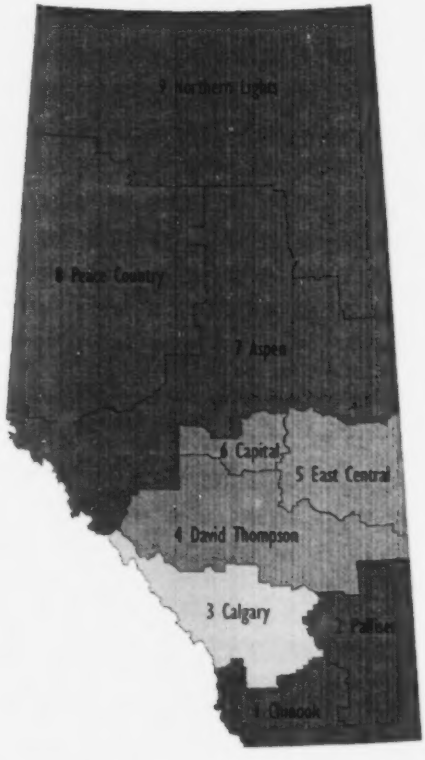
Women aged 30 to 34 were most likely to have a pregnancy end in a live birth, with 80.5% of estimated pregnancies in this age group ending in live births. Women under the age of 15 were least likely to have a pregnancy end in live birth, with just 24.3% of these pregnancies ending in live birth.

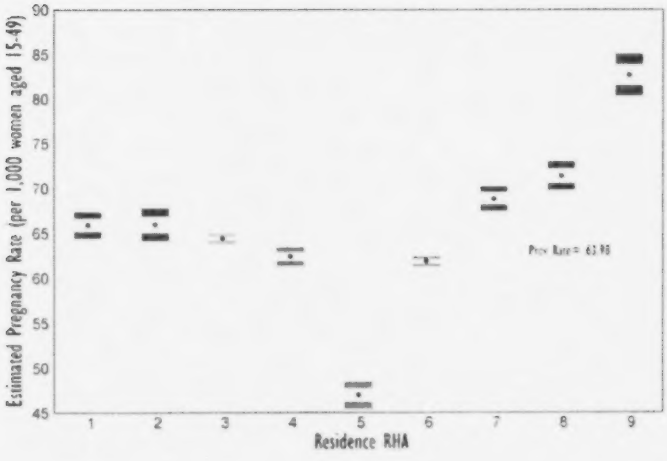
Estimated Pregnancies
Regional Effects

Map 1.
Estimated Pregnancy Rate (per 1,000 women aged 15-49) by Residence RHA, Alberta, 2000 – 2002 Combined









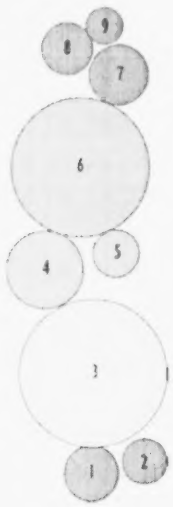
Estimated pregnancy rates by **residence RHA** appear in Table A3.

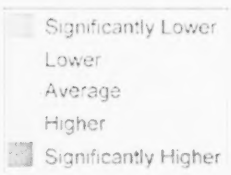
Estimated pregnancy rates for 2000 to 2002 combined were significantly higher than the provincial mean in RHAs 1, 2, 7, 8, and 9, and significantly lower than the provincial mean in RHAs 4, 5, and 6 (see Map 1 and Appendix 3).

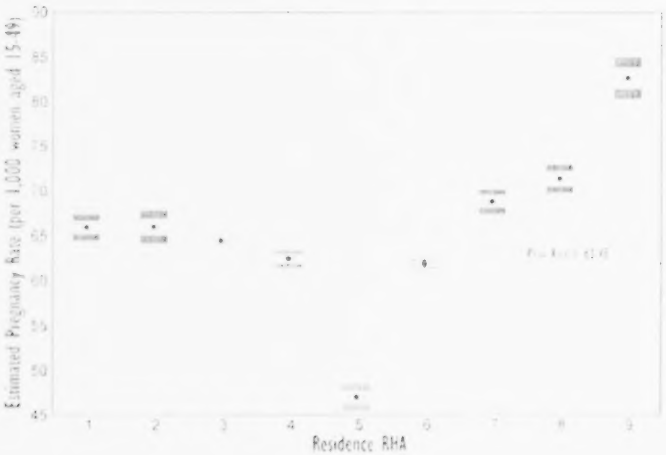
Estimated pregnancy rates by residence RHA and maternal age group are documented in Table A4. Rates for women over 44 years of age *must be interpreted with caution* due to the low number of cases in this age group.

Estimated Pregnancies
Regional Effects

Map 1.
Estimated Pregnancy Rate (per 1,000 women aged 15-49) by Residence RHA, Alberta, 2000 – 2002 Combined







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Estimated pregnancy rates for 2000 to 2002 combined were significantly higher than the provincial mean in RHAs 1, 2, 7, 8, and 9, and significantly lower than the provincial mean in RHAs 4, 5, and 6 (see Map 1 and Appendix 3).

Estimated pregnancy rates by residence RHA and maternal age group are documented in Table A4. Rates for women over 44 years of age *must be interpreted with caution* due to the low number of cases in this age group.

Spontaneous Abortions
Introduction

Spontaneous abortions are quite common. The spontaneous abortions reported here are those that were clinically recognized and treated by a physician. Spontaneous abortions that are not recognized or go untreated by physicians are excluded, resulting in an underestimation of true spontaneous abortion rates.

Definitions

Spontaneous abortion: Naturally occurring premature expulsion from the uterus of the products of conception – of the embryo, or of a nonviable fetus (Dorland, 2000). Also commonly referred to as miscarriage. In Alberta, the legal definition of spontaneous abortions refers to those occurring prior to 20 weeks gestation. Included in this category are clinical spontaneous abortions treated by physicians, excluding unreported or undetected spontaneous abortions.

For repeat spontaneous abortions, a two-month time lag between physician visits was used as the cutoff point for separate pregnancy events.

Spontaneous abortion rate: Number of spontaneous abortions treated by physicians per 1,000 women aged 15-49, or per 100 estimated pregnancies.

Background

Spontaneous abortion rates in clinically recognized pregnancies increase dramatically with **maternal age**. The rate for mothers under 30 years of age has been estimated to be in the 10% range, while rates for mothers over 35 have been estimated in the 26% to 28% range, with an overall rate of 10-15% (Goldhaber, Fireman, Saraiya, & Berg, 2000; Saraiya, Berg, Shulman, Green, & Atrash, 1999). Note that these estimates do not incorporate adjustment for spontaneous abortions that may have occurred in pregnancies that ended in induced abortions.

50 – 65% of of spontaneous abortions result from **chromosomal abnormalities**. About half of these are trisomies (Reindollar, 2000).

Data Sources

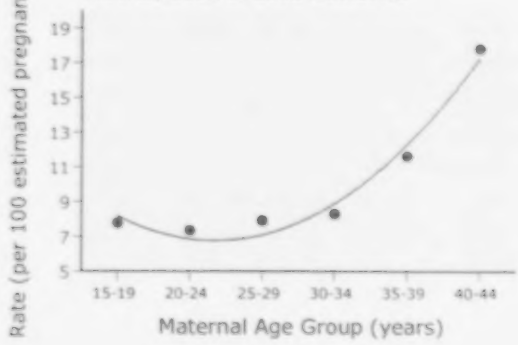
- **Spontaneous abortions**: Fee-for-Service Claims Files, Alberta Health and Wellness. Detailed criteria for data extraction are provided in Appendix 2.
- **Population estimates**: Alberta Health Care Insurance Plan Stakeholder Registration File, Alberta Health and Wellness.
- See the Methodology and Limitations section in the Introduction (page 14) for a caution regarding comparison of 2002 Spontaneous Abortion data to data from prior years due to changes in data coding systems.

Spontaneous Abortions
Provincial Trends and Effects

More than 1 out of every 6 pregnancies in women aged 40 to 44 years ended in clinically recognized spontaneous abortion in 2002.

Figure 3

Spontaneous Abortion Rate
by Maternal Age Group,
Alberta, 2000 to 2002 Combined



The **spontaneous abortion rate (per 1,000 women aged 15-49)** has declined along with falling fertility rates, although the rate was stable from 2000 to 2002 (see Table A1). The 2002 rate was 5.6.

The **spontaneous abortion rate (per 100 estimated pregnancies)** peaked in the early 1990's and has decreased over time (see Table A1). The 2002 rate was 8.7.

Spontaneous abortion rates vary with **maternal age** group (see Table A5). Note that rates for women under 15 and over 44 years are not reliable due to low numbers of spontaneous abortions in these age groups, *these rates must be interpreted with caution.*

- The rate (per 1,000 women aged 15-49) is highest for women aged 20 to 34, who have the highest fertility.
- The rate (per 100 estimated pregnancies) is similar across maternal age groups for women under 35, increases for women aged 35-39, and is highest for women over 39. For the 40-44 age group, 17.8% of estimated pregnancies ended in clinically-recognized spontaneous abortion in 2002 (see Figure 3 for these data for 2000 to 2002 combined).

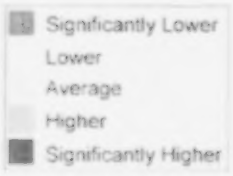
Spontaneous Abortions
Regional Trends and Effects

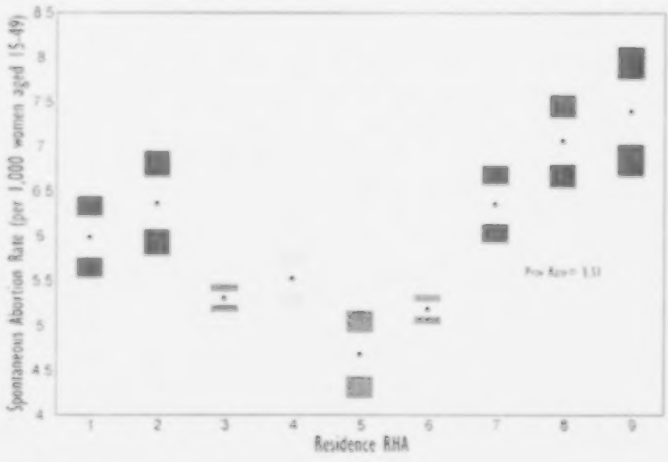
Map 2. Spontaneous Abortion Rate (per 1,000 women aged 15-49) by Residence RHA, Alberta, 2000 – 2002

Spontaneous abortion rates by **residence RHA** are shown in Table A6.

The **rate (per 100 estimated pregnancies)** was lower than the provincial average in RHAs 3 and 6, and higher than the provincial average in RHAs 2, 5, and 8.

The **rate (per 1,000 women aged 15-49)** was lower than the provincial average in RHAs 3, 5, and 6, and higher than the provincial average in RHAs 1, 2, 7, 8, and 9 (see Map 2 and Appendix 3).





Spontaneous Abortions
Regional Trends and Effects

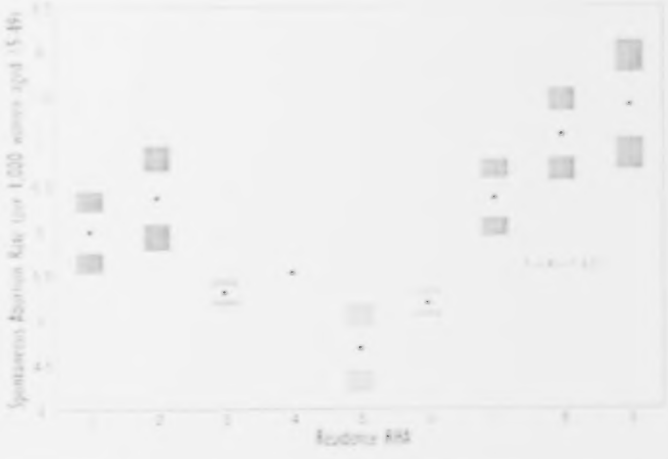
Map 2. Spontaneous Abortion Rate (per 1,000 women aged 15-49) by Residence RHA, Alberta, 2000 – 2002

Spontaneous abortion rates by **residence RHA** are shown in Table A6.

The **rate (per 100 estimated pregnancies)** was lower than the provincial average in RHAs 3 and 6, and higher than the provincial average in RHAs 2, 5, and 8.

The **rate (per 1,000 women aged 15-49)** was lower than the provincial average in RHAs 3, 5, and 6, and higher than the provincial average in RHAs 1, 2, 7, 8, and 9 (see Map 2 and Appendix 3).

Significantly Lower
Lower
Average
Higher
Significantly Higher

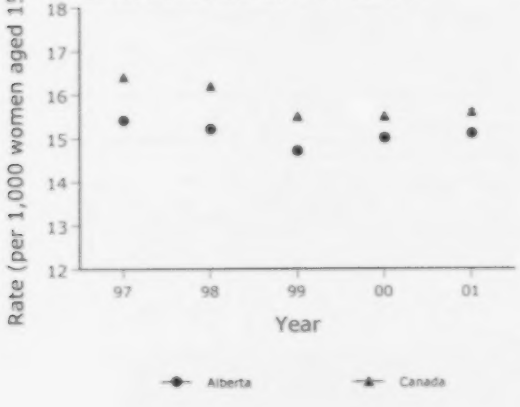


Reproductive Care Services
Induced Abortions
Introduction

The induced abortion rate is typically slightly lower in Alberta than in Canada.

Figure 4

Induced Abortion Rates, Canada and Alberta, 1997 to 2001



Definitions

Induced abortion: Intentional premature expulsion from the uterus of the products of conception – of the embryo, or of a nonviable fetus (Dorland, 2000).

Induced abortion rate: Number of induced abortions per 1,000 women aged 15-49, or per 100 estimated pregnancies.

Age-specific induced abortion rate: Number of induced abortions per 1,000 women in a given age group.

Background

Private abortion **clinics** became legal in Canada in 1988, and opened in Alberta in 1991. In 1996, private abortion clinics became fully-funded by RHAs in Alberta.

Abortions can be induced medically or surgically. **Medical abortions** involve the use of drugs and are usually done up to seven or eight weeks after the last menstrual period. **Surgical abortions** can involve manual vacuum aspiration (up to eight weeks after the last menstrual period), suction curettage (six to 14 weeks) or dilation and evacuation (14-20 weeks) (Sunnybrook and Women's College Health Sciences Centre, 2003).

In 2001, there were 15.6 abortions for every 1,000 women aged 15 to 44 residing in Canada (see Figure 4). The Alberta rate was 15.1 (Statistics Canada, 2004a). Alberta rates were consistently lower than Canadian rates, although the size of the difference was smaller in 2001 than in 1997. Neither the Canada nor the Alberta induced abortion rate follows a significant time trend.

Induced abortion rates for Canadian residents in 2001 were highest for women aged 20 to 24 (31.7 per 1,000 women aged 20 to 24). Women in their 20s accounted for 51.4% of women residing in Canada who had abortions in 2000 (Statistics Canada, 2004b).

Data Sources

- **Hospital induced abortions**: Fee-for-Service Claims Files, Alberta Health and Wellness. Detailed criteria for data extraction are provided in Appendix 2.
- **Clinic induced abortions**: Clinic Files, Alberta Health and Wellness

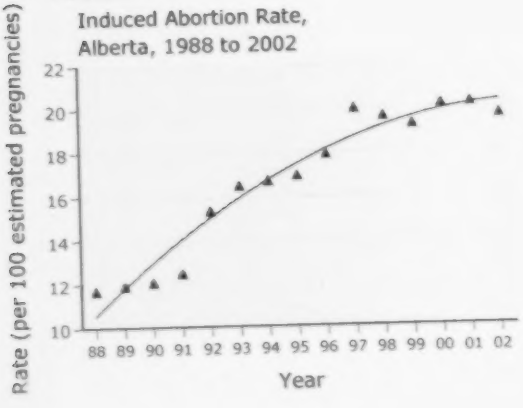
- Regional comparisons are provided from both facility and residence perspectives. However, because region of residence information is not available in the Clinic Files, it is extracted from Fee-for-Service Claims files and data may not correspond exactly due to data source differences.
- **Population estimates**: Alberta Health Care Insurance Plan Stakeholder Registration File, Alberta Health and Wellness
- See the Methodology and Limitations section in the Introduction (page 14) for a caution regarding comparison of 2002 Induced Abortion data to data from prior years due to changes in data coding systems.

Reproductive Care Services
Induced Abortions
Provincial Trends and Effects

Induced abortion rates are highest in women under the age of 25. While the rate of induced abortions per 1,000 women has shown a declining trend in recent years, the rate of induced abortions per 100 estimated pregnancies has increased over time in Alberta.

Figure 5

Induced Abortion Rate, Alberta, 1988 to 2002



The **induced abortion rate (per 1,000 women between 15 and 49 years of age)** peaked in 1997 and 1998, decreased in 1999, and then stabilized. The 2002 rate was 12.7 (see Table A1).

The **induced abortion rate (per 100 estimated pregnancies)** was 19.6 in 2002 (see Table A1). This rate increased between 1992 and 1997 and then leveled off (see Figure 5).

Induced abortions are most common for women between 18 and 24 years of age. Rates decline markedly with age after age 24 (see Table A7 **for age-specific induced abortion rates**). Note that the age-specific rates for women over 44 are not provided, due to low numbers of induced abortions in this age group.

Trends in the **age-specific induced abortion rate (per 1,000 women in each age group)** vary with age group (see Table A7).

- For women aged 15 to 24, the rate generally increased between 1988 and 1998, with a period of stability in the mid 1990s. After 1997, the rate declined somewhat.
- For 25 to 29 year olds, the rate increased throughout the late 1980s and the 1990s, peaking in 1997 and leveling off thereafter.
- The rate for 30 to 39 year old women is generally increased between 1988 and 2002, with intervening periods of stability.

The **age-specific induced abortion rate (per 100 estimated pregnancies)** has increased over time for all age groups of women. Women under the age of 15 have the highest proportion of pregnancies that end with induced abortion.

In 2002 for the first time, more induced abortions were performed in private clinics (51.0%) than in hospitals (49.0%) (see Table A8).

In 2002, 87.3% of induced abortions occurred before 13 weeks **gestation**, and 12.0% occurred between 13 and 20 weeks.
For women under age 25, induced abortions occurred most often between nine and 12 weeks gestation, while women aged 25 to 44 were most likely to have induced abortions at less than nine weeks (see Table A9).

In hospitals, the most common gestational age for induced abortions was nine to 12 weeks. 48.3% of hospital abortions in 2002 were in this category. In clinics, induced abortions at less than nine weeks gestation were most common. 48.4% of clinic abortions occurred in this category in 2002 (see Table A10).

Reproductive Care Services
Induced Abortions
Regional Trends and Effects

Nearly all induced abortions in Alberta are performed in Edmonton or Calgary.

Just 2.0% of induced abortions occurred outside of Edmonton or Calgary in 2002, in contrast to 1988, when 17.5% of induced abortions occurred outside of Edmonton and Calgary (see Table A11). During this time period, the percent of abortions performed in Edmonton increased, while that for Calgary remained relatively stable.

In 2002, 45.2% of induced abortions were performed in Edmonton and 52.8% in Calgary (see Table A11).

Induced abortions and induced abortion rates by **residence RHA** appear in Table A12. For 2000 to 2002 combined, induced abortion rates were higher than the provincial mean in RHAs 3 and 6 (the major metropolitan areas), and lower than the provincial mean in all other RHAs.

Reproductive Care Services
Deliveries
Introduction

Induction of labour and operative deliveries have become commonplace in Alberta and Canada. Alberta has higher rates of medical induction of labour and vacuum extraction than the Canadian mean, but lower rates of surgical induction and episiotomy.

Definitions

Induced labour: Initiation of labour prior to spontaneous onset, for the purpose of accomplishing delivery (Alberta Medical Association, 2003).

- **Medical induction**: Induction with oxytocic agents, non-pharmaceutical agents, and/or nipple stimulation.
- **Surgical induction**: Induction of labour by membrane stripping, artificial rupture of membranes, and/or mechanical cervical ripening.
- **Combined induction**: Induction by any combination of medical and surgical means.

Epidural analgesia: A method of pain relief consisting of continuous bathing of lumbar or thoracic nerve roots within the epidural space with an injected anesthetic solution (Dorland, 2000).

Vaginal delivery: Delivery of an infant through the normal openings of the uterus and vagina (Dorland, 2000).

Cesarean section: Incision through the abdominal and uterine walls for delivery of a fetus (Dorland, 2000). Also known as an abdominal delivery.

Breech delivery: Extraction of the infant from the uterus in breech presentation; i.e., when the buttocks of the fetus are presented in labour (Dorland, 2000).

Forceps delivery: Extraction of a fetus from the maternal passages by application of forceps to the child's head (Dorland, 2000).

Vacuum extraction: Use of a suction cup connected to a vacuum device, to facilitate delivery. The suction cup is placed on the fetus' head and vacuum pressure is applied to pull the baby out of the vagina (Morgan, 1990).

Episiotomy: Surgical incision into the perineum and vagina to facilitate delivery.

Rates for the above procedures are per 100 hospital deliveries.

Background

Indications for labour induction include post-term pregnancy, pre-labour rupture of membranes, fetal compromise, and maternal medical conditions. Risks include increased rates of cesarean birth and operative vaginal delivery. Induction is contraindicated

whenever labour or vaginal delivery is contraindicated, and when the only indication for induction is convenience (Crane, 2001).

Maternal and fetal effects of various methods of analgesia during labour, including **epidural analgesia**, have been debated for some time. In a review of regional anesthesia and analgesia for labour and delivery, Eltzchig, Lieberman, and Camann (2003) concluded that "epidural analgesia may prolong labor (sic) by approximately one hour…The effect on the rate of cesarean delivery is unclear and may vary with the practice-related choices of the provider. The literature does provide evidence of an increase in the rate of instrumental-assisted vaginal delivery and a decrease in the rate of spontaneous vaginal deliveries with epidural analgesia, although the reason for this association is not well understood" (pp. 324-5).

Cesarean section is major abdominal surgery, and consequently cesarean rates are an important reproductive health issue. Much research has been directed at determining the source of increasing cesarean rates in recent decades. Joseph, Young, Dodds, et al. (2003) studied more than 127,000 deliveries in Nova Scotia between 1988 and 2000, in which primary cesarean rates increased from 13.4% in 1988 to 17.5% in 2000. They found that changes in maternal characteristics (increases in maternal age, prepregnancy weight and pregnancy weight gain, as well as reduced parity) explained much of the increase in primary cesarean rates.

Vaginal birth after cesarean section (VBAC) has increased in frequency in recent years. The success rate (the rate of vaginal delivery) of trial of labour is about 75% (Flamm, 2001). Up to 10% of trials of labour after vertical (classical) incision result in uterine rupture, while the uterine rupture rate after prior low transverse incision is approximately 1%. Hysterectomy is required after approximately 10% of cases of uterine rupture (Flamm, 2001).

In recent years, **vacuum assisted deliveries** have increased in frequency in Canada, while forceps deliveries have become less common. Maternal trauma is reduced with the use of vacuum extraction compared to forceps delivery, while certain types of neonatal injury (most notably cephalhematoma) appear to be more common with vacuum extraction (Putta & Spencer, 2000; Wen, Liu, Kramer, Marcouz, Ohlsson, Sauve, & Liston, 2001; see also Buekens, 2001).

Episiotomy is a controversial surgical procedure that remains common (Health Canada, 2003). Episiotomies are associated with increased rates of perineal and pelvic floor morbidity relative to deliveries in which the perineum remains intact or tears

spontaneously (Klein, Gauthier, Robbins, Kaczorowski, Jorgensen, Franco, et al., 1994).

Figure 6

Delivery Indicators (with 95% confidence intervals), Canada and Alberta, 2000/01

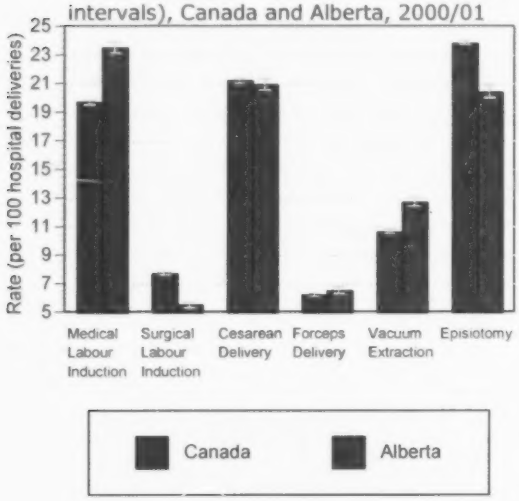


Figure 6 shows Canada and Alberta rates for a number of delivery indicators.

- In Canada in fiscal year 2000/2001, the rates of medical and surgical induction were 19.7 and 7.7 per 100 hospital deliveries. The corresponding Alberta rates were 23.5 and 5.5 (Health Canada, 2003).
- The Canadian cesarean section rate was 21.2 (per 100 hospital deliveries) in 2000/2001; the Alberta rate was 20.9 (Health Canada 2003).
- Forceps and vacuum extraction deliveries occurred at rates of 6.2 and 10.6 (per 100 hospital vaginal deliveries) in Canada in 2000/2001. The Alberta rates were 6.5 and 12.7, respectively (Health Canada 2003).
- Episiotomy rates were 23.8 and 20.4 (per 100 hospital vaginal deliveries) in Canada and Alberta, respectively, for 2000/2001 (Health Canada 2003).

Data Sources

- **Inductions, cesarean sections, forceps deliveries, and vacuum extractions**: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.
- Rates are calculated based on hospital deliveries only; home deliveries are not included in total deliveries in this section. Because only primary, secondary, and tertiary ICD9-CM diagnostic and procedure codes were available from 1985 to 1992, the diagnostic and procedure criteria for all years from 1988 to 2001 were based on the first three codes only. Thus, the number of procedures (especially minor procedures) may be under-counted. Detailed criteria for data extraction are provided in Appendix 2.
- **Epidural analgesia, cesarean section, and breech delivery data**: Alberta Medical Association Reproductive Care Committee.
- **Episiotomy data**: Northern and Central Alberta Perinatal Outreach Program, Southern Alberta Perinatal Outreach Program.
- See the Methodology and Limitations section in the Introduction (page 14) for a caution regarding comparison of 2002 Deliveries data to data from prior years due to changes in data coding systems.

Reproductive Care Services
Deliveries
Provincial Trends and Effects

In 2002, 19.3% of deliveries involved labour induction. Epidural analgesia was used in 38.6% of deliveries. 23.2% of deliveries were by cesarean section.

Figure 7

Total Labour Induction Rate, Alberta, 1988 to 2002

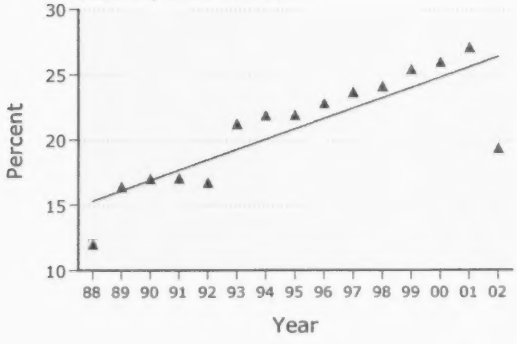
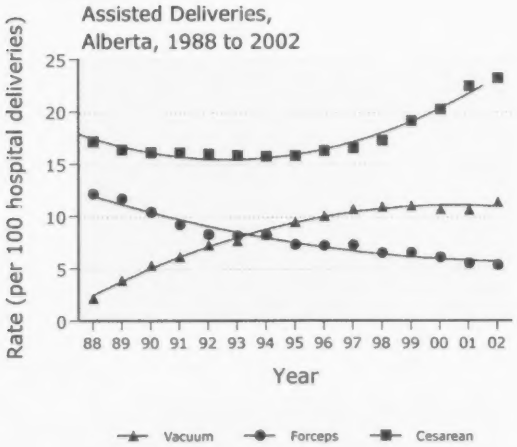


Figure 8

Assisted Deliveries, Alberta, 1988 to 2002



Labour Inductions

Labour inductions performed on an outpatient basis were not captured from April to December 2002. Therefore, 2002 inductions are under-reported.

The **total induction** rate (per 100 hospital deliveries) was 19.3 in 2002. Induction rates increased linearly from 1988 to 2002 (see Table A13 and Figure 7).

In 2002, 60.6% of induced labours were **medically induced**. The medical induction rate was 11.7 (per 100 hospital deliveries) in 2002. The surgical induction rate was 2.5.

The **combined induction** rate was 5.2 (per 100 hospital deliveries) in 2002.

Epidural Analgesia

Table A14 shows epidural analgesia use in labour and delivery by **level of hospital** for 1998 to 2002 (see Health Canada 2000 for definition on levels of hospital care).

The provincial **epidural analgesia** rate was 38.6 (per 100 hospital deliveries) in 2002. This rate varied considerably across the province, from 5.7 in Grande Prairie to 65.1 in the Grey Nuns Hospital (Edmonton) in 2002.

Assisted Deliveries

Rates for cesarean section, forceps, and vacuum extraction deliveries are shown in Figure 8.

The **cesarean section** rate has increased steadily since 1996, and reached a new high of 23.2 (per 100 hospital deliveries) in 2002 (see Table A15).

About two-thirds (65.3%) of cesarean sections were primary cesarean sections in 2002. In 2002, there was a trial of labour in 35.7% of deliveries for mothers who had previous cesarean sections. 72.8% of these attempted vaginal births after cesarean sections (VBACs) resulted in vaginal births (see Tables A16 and A17).

The perinatal and neonatal combined death rate for cesarean sections was 7.6 in 2002 (per 1,000 total births).

Table A18 shows the cesarean section and VBAC rates for 1992 to 2002. Cesarean section rates increased from 1996 on, while trials of labour decreased. The VBAC rate declined steadily from 1998 to 2002. There are no significant trends in the VBAC success rate.

In 2002, the **forceps** rate declined further and reached its lowest point in 15 years, at 5.3 (per 100 hospital deliveries). Conversely, the **vacuum extraction** rate reached its highest point in 15 years in 2002, at 11.3 (per 100 hospital deliveries). As shown in Figure 8, the forceps rate has continued to decline, while the vacuum extraction rate has leveled off over the last several years.

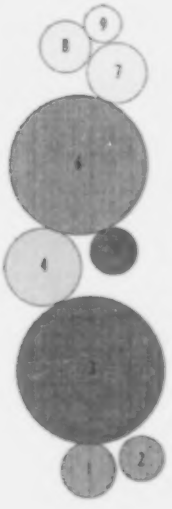
The provincial episiotomy rate was 19.1% (per 100 vaginal deliveries) for 2000 to 2002 combined.

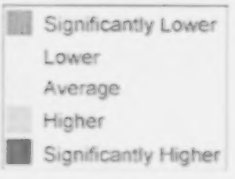
Reproductive Care Services
Deliveries
Regional Trends and Effects

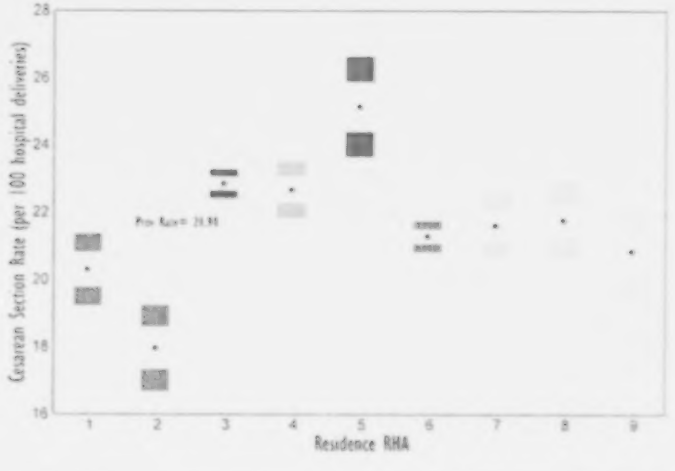
Map 3: Cesarean Section Rate (per 100 hospital deliveries) by Residence RHA, Alberta, 2000 – 2002 Combined

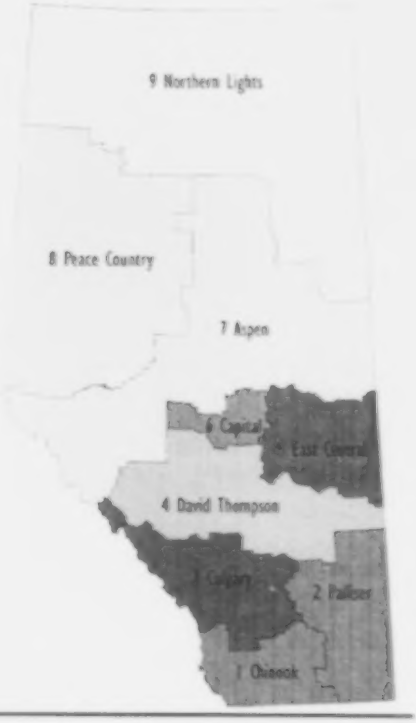
Reproductive Care Services
Deliveries
Regional Trends and Effects

Map 3. Cesarean Section Rate (per 100 hospital deliveries) by Residence RHA, Alberta, 2000 – 2002 Combined









Induction rates by residence RHA for 2000 to 2002 are in Table A19. RHAs 3 and 6 (the major metropolitan areas) had higher total induction rates than the provincial mean, while the induction rates in RHAs 1, 2, 4, 7, 8, and 9 were lower than the provincial mean.

Table A20 shows the **epidural analgesia rates** for regional health authority facilities for 2000 to 2002. The rates were higher than the provincial mean in RHAs 3 and 6, and lower in all other RHA's.

Combined data for 2000 to 2002 for **residence RHAs**, show that **cesarean rates** are lower than the provincial mean in RHAs 1, 2, and 6, and higher than the provincial mean in RHAs 3 and 5 (see Map 3, Appendix 3 and Table A21). Tables A16 and A17 provide detailed data for the regional health authorities for 2001 and 2002.

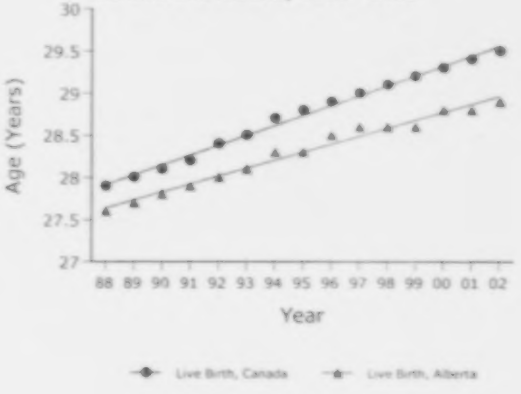
Forceps and vacuum extraction rates for 2000 to 2002 combined varied with **residence RHA** (see Table A21). Forceps rates were lower than the provincial mean in RHAs 1, 2, 4, 5, 7, and 8, and higher than the mean in RHAs 3, 6, and 9. Vacuum extraction rates were lower than the provincial mean in **residence RHAs** 1, 2, 4, 6, and 8, and higher in RHAs 3, 5, and 9.

Maternal Factors
Maternal Age
Introduction

Maternal age is increasing in Alberta and Canada, as well as in many other countries. Maternal age in Alberta remains lower than that of Canada, however.

Figure 9

Mean Maternal Age,
Canada and Alberta, 1988 - 2002



Definitions

Maternal age refers to the age of the mother in years at the time of the event in question (i.e., live birth, stillbirth, spontaneous abortion, etc.).

Background

Adolescent mothers are more likely to live in poverty and to belong to minority groups; both of these factors are associated with increased obstetric and neonatal risk. In particular, teenage mothers are more likely to have low birth weight and/or preterm infants (Koniak-Griffin & Turner-Pluta, 2001; Tough, Svenson, & Schopflocher, 1999). Teen mothers are also at considerable psychosocial risk, tending to be under-educated and under-employed relative to the general population (Koniak-Griffin & Turner-Pluta, 2001).

Mothers 30 years and older are more likely than mothers aged 20-29 years to have cesarean sections, low birth weight births, preterm births, maternal complications, and infants with chromosomal anomalies (MacNab, Macdonald, & Tuk, 1997).

Oocyte (egg) donation has made conception and pregnancy possible for women in their 50s. In a study of such pregnancies, Paulson, Boostanfar, Saadat, et al. (2002) reported high rates of preeclampsia, gestational diabetes, and cesarean delivery. In another study of deliveries to women aged 50 and above, Salihu, Shumpert, Slay, Kirby and Alexander (2003) found substantial increases in rates of maternal complications and adverse fetal outcomes (such as low birth weight, preterm birth, and fetal mortality).

In 2002, the mean maternal age was 29.5 years in Canada and 28.9 years in Alberta (Statistics Canada, 2004c). Figure 9 shows that maternal age is steadily increasing in both Alberta and Canada. Mean maternal age in Alberta is consistently lower than the Canadian mean.

Data Sources

- **Maternal age data**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.

Maternal Factors
Maternal Age
Provincial Trends and Effects

Most measurable pregnancy outcomes vary with maternal age. The best outcomes are generally found in mothers aged 25 to 34.

Figure 10

Mean Maternal Age, Alberta, 1988 to 2002

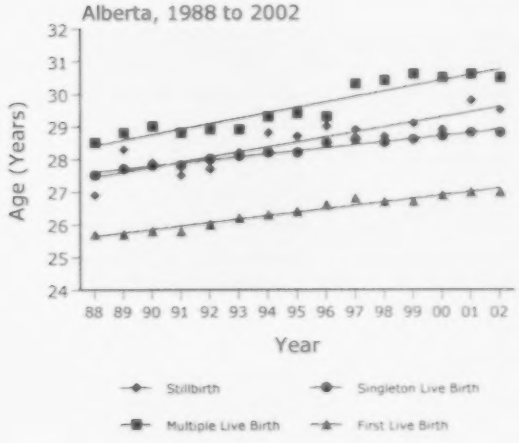


Table 22 shows the relationship between maternal age and various indicators for 2000 to 2002 combined.

Teenage mothers are most likely to engage in risk behaviours such as smoking and alcohol consumption during pregnancy. Teenage mothers have higher than average low birth weight rates, and are at increased risk of preterm birth and stillbirth compared with mothers aged 20 to 34. Mothers under 20 years of age have the lowest rate of multiple births.

Pregnancy outcomes are particularly likely to be negative for mothers 40 years and older. For example, the preterm birth rate for mothers 40 and older for 2000 to 2002 combined was 45% higher than that for 25-29 year old mothers. The stillbirth rate for mothers 40 and older was more than three times that of mothers aged 25 to 29. The multiple birth rate for mothers older than 39 was 70% higher than that for 25 to 29 year old mothers. Multiple births are associated with considerably increased risk of morbidity, mortality and pregnancy complications.

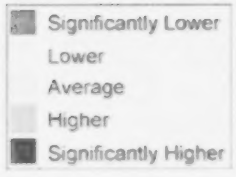
In 2002, the mean maternal age at delivery reached a new high for Alberta at 28.9 years. There is a clear linear increase in mean maternal age since 1988 (see Table A23 and Figure 10). As Figure 10 shows, mean maternal age is one to two years higher for multiple live births than for singleton live births. Mean maternal age for multiple births reached a high of 30.5 years in 2002. Mean age at first live birth was 27.0 in 2002, up from 25.7 in 1988.

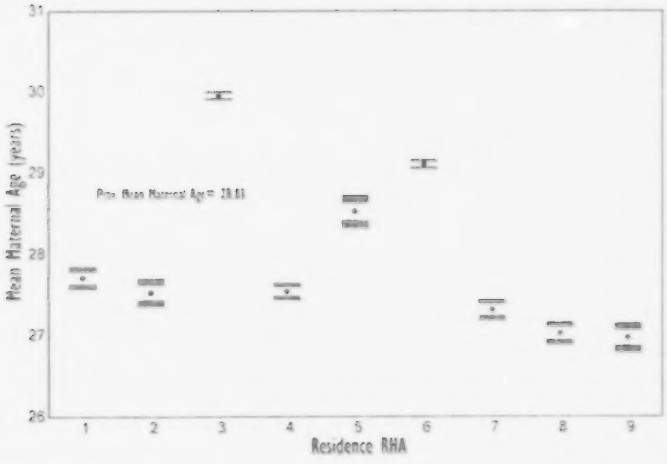
Maternal Factors
Maternal Age
Regional Trends and Effects

Map 4. Mean Maternal Age by Residence RHA, Alberta, 2000 – 2002 Combined

Mean maternal age data by residence RHA for 1988 to 2002 are in Table A24. Table A24 also contains the percent of women having a live birth who were age 35 and older, by residence RHA. This rate doubled over 15 years in Alberta, from 7.1 in 1988 to 14.5 in 2002. The major metropolitan areas, in particular Calgary, had the highest percent of older mothers. In 2002, 18.2% of Calgary region women having a live birth were 35 or older.

Mean maternal age by residence RHA for live births for 2000 to 2002 combined is shown in Map 4 (see also Appendix 3). It is clear from the map that maternal age is elevated in Alberta's two major metropolitan areas and is significantly lower than the provincial mean in all remaining RHAs.





Maternal Factors
Maternal Age
Regional Trends and Effects

Map 4. Mean Maternal Age by Residence RHA, Alberta, 2000 – 2002 Combined

Maternal Factors
Maternal Prenatal Morbidity
Introduction

Maternal prenatal morbidity can have long-lasting effects on mothers and their babies. Increasing rates of obesity, diabetes, heart disease and hypertension among women of childbearing age are cause for concern.

Definitions

Diabetes (diabetes mellitus): A chronic syndrome of impaired carbohydrate, protein, and fat metabolism owing to insufficient secretion of insulin or to target tissue insulin resistance. It occurs in two major forms: Type 1 diabetes mellitus and Type 2 diabetes mellitus (Dorland, 2000).

Gestational diabetes: Diabetes mellitus with onset or first recognition during pregnancy; this category does not include diabetics who become pregnant (Dorland, 2000).

Heart disease: Any organic, mechanical, or functional abnormality of the heart, its structures, or the coronary arteries (Dorland, 2000). This category includes women with asymptomatic or symptomatic heart disease.

Hypertension: High arterial blood pressure, diagnosed prior to pregnancy. In this case, this includes women who had blood pressure of 140/90 or higher, or women who were using antihypertensive drugs.

Gestational hypertension: High arterial blood pressure with onset during pregnancy.

Chronic renal disease: Any disease of the kidney persisting over a long period of time.

Prenatal bleeding: Vaginal bleeding prior to birth. In this case, bleeding is classified as occurring prior to 20 weeks gestation, at 20 weeks gestation or later, or at both before and after 20 weeks gestation.

Rates for the above measures are expressed in terms of percent of women (with a completed antenatal risk assessment) delivering

Background

Maternal obesity is associated with increased risk of gestational diabetes, preeclampsia, cesarean delivery, and delivery of a macrosomic infant (Rosenberg, Garbers, Chavkin, & Chiasson, 2003).

In women with **pre-conception diabetes**, pregnancy brings increased risk of diabetic complications, such as progression of retinopathy and increased risk of death in the event of myocardial infarction. There is also increased risk of preeclampsia, gestational hypertension, and cesarean section. Poor glycemic control very early in pregnancy results in increased risk of congenital anomalies, while poor control later in pregnancy increases risk for macrosomia (and associated labour and delivery complications) and neonatal hypoglycemia (Ryan, 1998).

Gestational diabetes typically occurs fairly late in pregnancy, so congenital anomalies are not a common outcome of gestational diabetes. The primary morbidities associated with gestational diabetes are macrosomia and neonatal hypoglycemia. The occurrence of gestational diabetes is a strong predictor of future diabetes (both gestational and non-gestational) in the mother (Ryan, 1998).

Changes to the cardiovascular system during pregnancy are dramatic, and pregnancy thus poses a risk for women with **cardiac disease**. Most notably, there is increased risk of maternal mortality, primarily due to pulmonary edema. Due to improved treatments in recent decades, more pregnancies are occurring among women with congenital heart disease, and such cases now make up a large proportion of heart disease seen during pregnancy (Gei & Hankins, 2001).

Hypertension in pregnancy increases in frequency with maternal age. Due to recent trends toward delayed childbirth, hypertension is emerging as a complication in more pregnancies. Chronic hypertension can result in maternal complications, such as placental abruption, stroke, and preeclampsia, and fetal complications, such as preterm birth, small-for-gestational-age birth, stillbirth, and neonatal death (Livingston & Sibai, 2001).

Renal changes during pregnancy are significant. Renal insufficiency (**kidney disease**) can result in maternal hypertension, preeclampsia, preterm birth, stillbirth, and small-for-gestational-age birth. The risks are proportional to the severity of renal dysfunction (Sanders & Lucas, 2001).

Data Sources

- **Maternal prenatal morbidity data**: Northern and Central Alberta Perinatal Outreach Program, Southern Alberta Perinatal Outreach Program.

Maternal Factors
Maternal Prenatal Morbidity
Provincial Trends and Effects

Figure 11

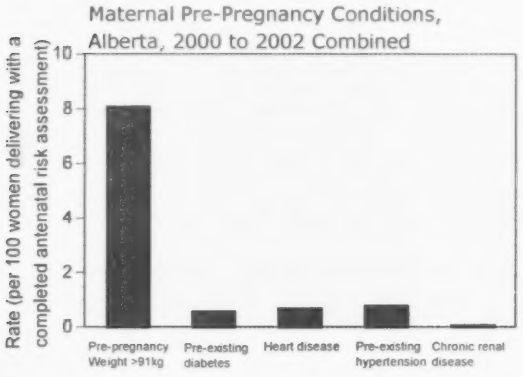
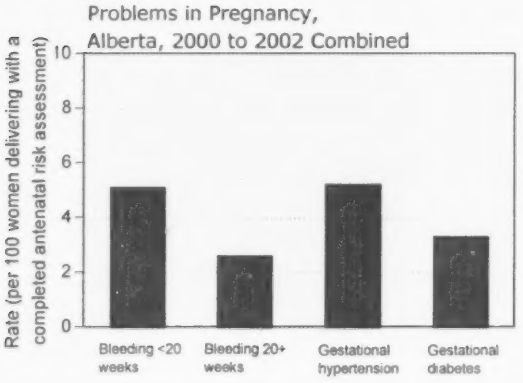


Figure 12



Data on the following prenatal maternal conditions and problems during pregnancy appear in Tables A25, A26, and A27. All data reported below are for 2000 to 2002 combined.

Note that rates include only women with a completed antenatal risk assessment. For 2000 to 2002 combined, 2.2% of women delivering did not have a completed risk assessment.

Maternal pre-pregnancy conditions

High **maternal pre-pregnancy weight** (over 91 kg) is relatively common in Alberta: 8.1% of Alberta women giving birth between 2000 and 2002 had a pre-pregnancy weight of 91 kilograms or more (see Figure 11). This is the most common type of maternal prenatal morbidity reported on in this document.

Pre-existing diabetes was reported in 0.6% of women giving birth in Alberta.

The rate of **heart disease** in women giving birth was 0.7%.

Pre-existing hypertension occurred in 0.8% of Alberta women giving birth.

Chronic renal disease was rare, with a rate of 0.1%.

Problems during pregnancy

Prenatal bleeding before 20 weeks gestation was reported in 5.1% of women giving birth, and in 2.6% of women at or after 20 weeks gestation. Just 0.7% of women experienced prenatal bleeding both before and after 20 weeks gestation (see Figure 12).

Gestational hypertension occurred in 5.2% of Alberta women giving birth.

The provincial gestational diabetes rate was 3.3%. This rate varied dramatically with **maternal age** (see Table A27). The rate for mothers 40 to 44 years old was more than nine times that of mothers aged 15 to 19 years.

Maternal Factors
Maternal Prenatal Behaviours
Introduction

The behaviours mothers engage in during pregnancy can have enduring effects. More than one in five Alberta mothers smoke during pregnancy, often causing preventable pregnancy complications and infant morbidity.

Definitions

Smokers are women who reported smoking cigarettes throughout pregnancy, or quitting smoking at some point during pregnancy.

Non-smokers reported not smoking at all during pregnancy.

Alcohol consumption refers to self-reported consumption of alcoholic beverages at any time during pregnancy.

Street drug use refers to the self-reported use of any street drug at any time during pregnancy Marijuana and cocaine are the drugs used most commonly by Alberta women who use street drugs during pregnancy.

Prenatal class attendance refers to a positive response from the mother when asked if she attended prenatal classes during pregnancy. No definition of prenatal classes was provided. Prenatal class attendance data are presented below for first births only.

Rates for the above measures are expressed as percent of live births.

Background

Negative effects of **smoking** on the fetus and neonate include decreased birth weight, decreased postnatal growth, and increased risk of ectopic pregnancy, spontaneous abortion, pre-labour rupture of membranes, intrauterine growth restriction, preterm birth, placental complications, perinatal death, sudden infant death syndrome, and cleft lip/palate (Andres & Day, 2000; Campbell, 1992; Chen, Fair, Wilkins, Cyr, and the Fetal and Infant Mortality Study Group of the Canadian Perinatal Surveillance System, 1998; Chung, Kowalski, Kim, & Buchman, 2000; Lee, 1998; Pivarnik, 1998; Pollack, Lantz, & Frohna, 2000; Tough et al., 1999).

Wisborg, Kesmodel, Henriksen, Olsen, and Secher (2001) found increased risk of stillbirth and infant mortality for children of women who smoked throughout pregnancy. They concluded that in a population in which 30% of pregnant women smoke, 25% of stillbirths and 20% of infant deaths could be prevented if all pregnant smokers stopped smoking by 16 weeks gestation.

Alcohol consumption during pregnancy is associated with learning disabilities, hyperactivity, and deficits in attention and cognitive functioning in the affected child. Binge drinking (consumption of large amounts of alcohol in short periods of time) is particularly harmful, especially during critical periods of fetal brain development early in pregnancy (Maier & West, 2001). Furthermore, binge drinking is associated with increased likelihood of maternal street drug use (Gladstone, Levy, Nulmen, & Koren, 1997).

Alcohol use during pregnancy can cause fetal alcohol syndrome (FAS), which consists of the triad of poor prenatal and postnatal growth, central nervous system abnormalities, and craniofacial anomalies (Wagner, Katikaneni, Cox, & Ryan, 1998). Children with FAS exhibit attentional disorders, impulsivity, poor social skills, and sensory, language and vestibular disorders (Church & Abel, 1998). Fetal alcohol spectrum disorder (FASD) includes the full spectrum of alcohol-related injuries but may not be manifested as the classical FAS triad.

Marijuana use during pregnancy is associated with low socioeconomic status, non-Caucasian ethnicity, lower education level, young age, non-married status, and abuse of other drugs (Lee, 1998). Marijuana use has been implicated in intrauterine growth restriction; as well, infants born to marijuana users may be lethargic, with impaired visual responses, and decreased startle reflexes (Wagner et al., 1998).

Pregnancy increases the toxicity of **cocaine**, via increased hypertensive response. Cocaine use is associated with spontaneous abortion, placental abruption, preterm birth and fetal growth restriction (Plessinger & Woods, 1998). Neurobehavioural and developmental deficits subsequent to cocaine use during pregnancy are well-documented, as are increased risks of sudden infant death syndrome and abnormal respiratory patterns (Wagner et al., 1998).

A significant problem in the determination of the effects of drug use on fetal and infant development is the widespread use of multiple substances by drug users.

Figure 13

Rate of Smoking during Pregnancy by Maternal Age Group, Canada, 1998/99

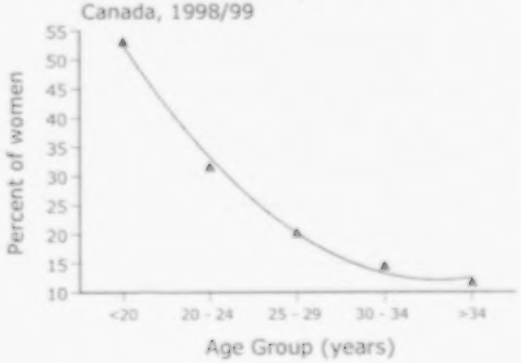
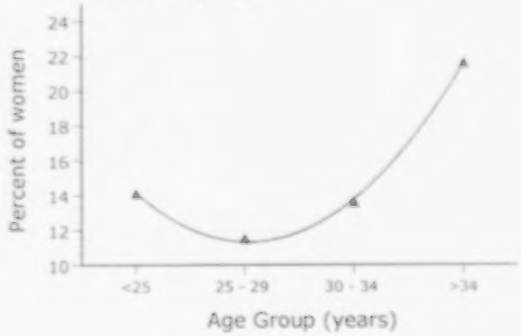


Figure 14

Rate of Alcohol Consumption during Pregnancy by Maternal Age Group, Canada, 1998/99



In the 1998/1999 fiscal year, 19.4% of Canadian mothers with children under two years of age reported smoking cigarettes during pregnancy, with 5.3% reporting smoking more than 10 cigarettes per day. This represents a decrease in reported smoking during pregnancy from 1994/5, when 23.5% of mothers of children under two reported smoking during pregnancy. The 1998/1999 smoking rate was highest for teenage mothers (53.2%) and lowest for mothers over 34 years of age (11.8%; see Figure 13). Of mothers who did not complete high school, 35.9% reported smoking during pregnancy, compared with 9.0% of university/college graduates (Health Canada, 2003).

The same survey showed that 14.6% of mothers with children under two reported consuming alcohol at any point during pregnancy in Canada in 1998/1999, down from 17.4% in 1994/1995 (see Figure 14). Mothers 35 years of age and older were most likely to report drinking alcohol during pregnancy. Binge drinking is more common among younger mothers, however (Gladstone et al., 1997; Maier & West, 2001). Mothers without high school educations had an alcohol consumption rate of 9.9%, while mothers with university/college graduation had a rate of 17.7% (Health Canada, 2003).

Data Sources

- **Cigarette smoking, alcohol consumption, street drug use, prenatal class attendance and live birth data**: Vital Statistics Birth Registration files, Department of Government Services, April 2002 Release.
- Data on maternal smoking, alcohol consumption, street drug use, and prenatal class attendance for live births are derived from the Vital Statistics Notice of Live Birth and Stillbirth. This information is not complete for all births; analyses include only those births for which the relevant information is available.
- Note that these data are self-reported, and thus are subject to the biases inherent in such data (e.g., inaccurate reporting due to social desirability issues).
- On new Notice of Live Birth forms distributed in 2000, the "Quit" option for the question "During this pregnancy did mother smoke?" was not available, leaving "Yes" and "No" as the only options. In order to allow combination of data for 2000 through 2002, all "Yes" and "Quit" responses were grouped into a single category (representing smokers), and "No" responses into another (representing non-smokers).

Maternal Factors
Maternal Prenatal Behaviours
Provincial Trends and Effects

Cigarette Smoking

Figure 15

Rate of Smoking during Pregnancy, Alberta, 1997 to 2002

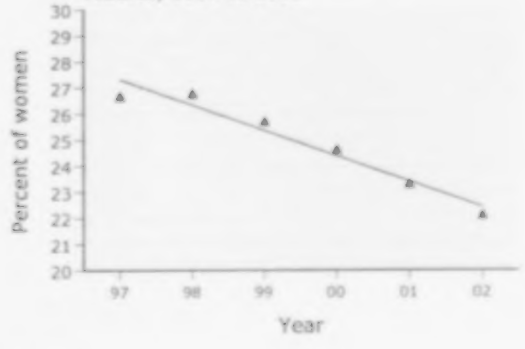


Table A28a contains data on self-reported smoking rates among women who gave birth to a live infant in Alberta between 1997 and 2002.

In 2002, 22.1% of Alberta women who gave birth to a live infant reported smoking at some point during their pregnancy. This rate is decreasing over time, as shown in Figure 15. The rate of smoking during pregnancy in Alberta is higher than the national rate. Canadian data also show a declining trend (see Introduction to this section).

Table A29 provides rates for 2000 to 2002 combined.

- Smoking during pregnancy is associated with younger maternal age. Mean **maternal age** was 26.2 years for smokers and 29.7 years for non-smokers. As shown in Table A22, mothers under the age of 25 are most likely to smoke, especially teenage mothers. More than half (56.6%) of mothers who were under the age of 20 and gave birth to a live infant between 2000 and 2002 reported smoking during pregnancy.
- Babies born to non-smokers had higher **birth weights** (mean 3,423 grams) than babies born to smokers (mean 3,273 grams).
- The **low birth weight** rate for non-smokers was 5.4 (per 100 live births); the rate for smokers was 8.2.
- Non-smokers were more likely to give birth at term. The **preterm birth** rate for non-smokers was 7.9 (per 100 live births); the rate was 9.6 for smokers.

Maternal Factors
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Provincial Trends and Effects

Alcohol Consumption

Figure 16

Rate of Alcohol Consumption During Pregnancy, Alberta, 1997 to 2002

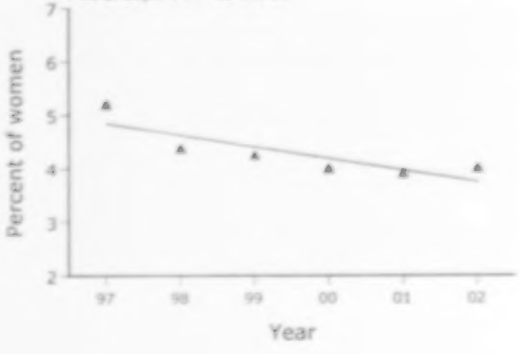


Table A28a describes incidence of self-reported alcohol consumption among women who gave birth to a live infant in Alberta between 1997 and 2002.

4.30% of women reported consuming alcohol during pregnancy in 2002. As shown in Figure 16, the rate follows a linearly decreasing trend over time.

Table A29 provides rates for 2000 to 2002 combined.

- Younger mothers were more likely to report consuming alcohol. Mean **maternal age** for mothers who did not report consuming alcohol during pregnancy was 29.0 years, compared with 26.8 years for those who reported consuming alcohol. This trend is different from that for Canada, which was described on in the Introduction to this section. As shown in Table A22, teenage mothers have the highest rates of alcohol consumption during pregnancy, with 10.7% of teenage mothers who gave birth to a live infant between 2000 and 2002 reporting alcohol consumption during pregnancy.
- Mean **birth weight** was 3,392 grams for babies born to mothers who did not consume alcohol during pregnancy, compared with 3,325 for babies born to mothers who did consume alcohol.
- The **low birth weight** rates were 8.2 and 6.0 (per 100 live births) for babies with mothers who reported alcohol consumption and for those whose mothers did not, respectively.
- **Preterm births** occurred at a rate of 8.2 (per 100 live births) among babies of women who did not consume alcohol during pregnancy. The rate was 9.7 for babies of women who did consume alcohol during pregnancy.

Maternal Factors
Maternal Prenatal Behaviours
Provincial Trends and Effects

Use of Street Drugs

Figure 17

Rate of Street Drug Use During Pregnancy, Alberta, 1997 to 2002

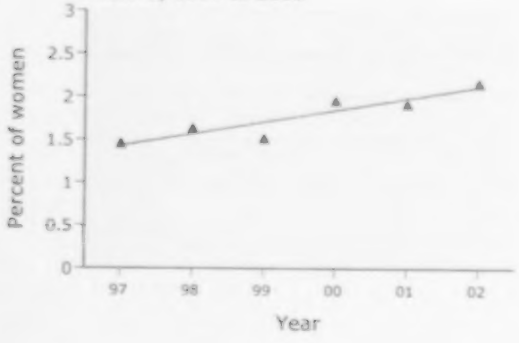


Table A28a contains data on incidence of street drug use among women who gave birth to a live infant in Alberta between 1997 and 2002.

1.8% of Alberta women who had a live birth between 1997 and 2002 reported using street drugs during pregnancy. Unlike the declining rates for cigarette smoking and alcohol consumption, the reported rate of street drug use shows a significant linear increase over time (see Figure 17). The rate was 2.2% for 2002.

Marijuana was the most commonly used drug, followed by cocaine/crack cocaine. As of 2000, reports of ecstasy use during pregnancy appeared, and as of 2002, mothers began reporting use of crystal methamphetamine during pregnancy.

Table A29 provides rates for several indicators for 2000 to 2002 combined.

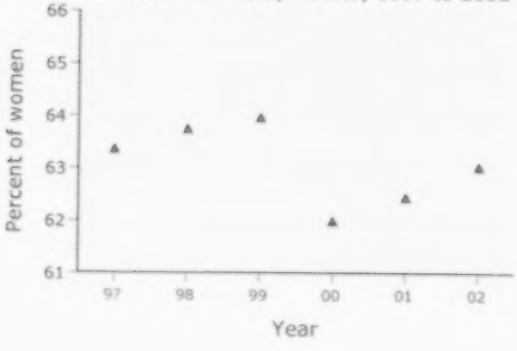
- Street drug users tended to be considerably younger than non-users. Mean **maternal age** for users of street drugs was 24.2 years, compared with 29.0 years for non-users.
- **Mean birth weight** was 204 grams higher for babies of non-users (3,393 grams for babies of non-users, and 3,189 grams for babies of users of street drugs).
- The **low birth weight rate** was 6.0 (per 100 live births) for babies born to non-users of street drugs. The rate for users' babies (12.3) was more than double that of non-users.
- **Preterm** births occurred at a rate of 14.3 for users of street drugs. The preterm rate for non- users was 8.2.

Maternal Factors
Maternal Prenatal Behaviours
Provincial Trends and Effects

Prenatal Classes

Figure 18

Rate of Prenatal Class Attendance
For First Live Births, Alberta, 1997 to 2002



For 1997 to 2002 combined, 63.1% of first-time mothers having live births reported attending prenatal classes (see Table A28b and Figure 18). This rate did not change with time between 1997 and 2002.

Table A29 contains information on a number of indicators for first-time mothers attending prenatal classes and those not attending.

- First-time mothers attending **prenatal classes** were 27.8 years old on average, while non-attendees were 25.6 years old on average .
- **Mean birth weight** for infants born at term whose mothers attended prenatal classes was 3,461 grams, with a mean of 3,393 grams for infants whose mothers did not attend prenatal classes.
- There was a relationship between low birth weight and prenatal class attendance. The **low birth weight rate** was 1.6 (per 100 live term births) for infants with mothers who attended prenatal classes and 2.5 for infants whose mothers did not attend.
- Mean birth weights and low birth weight rates (above) are limited to term births, because mothers who give birth before term have less opportunity to attend prenatal classes than those who deliver at term.

Maternal Factors
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Regional Trends and Effects

Map 5. Smoking Rate (per 100 live births) by Residence RHA, Alberta, 2001 – 2002 Combined

Maternal Factors
Maternal Prenatal Behaviours
Regional Trends and Effects

Rates for prenatal smoking, alcohol consumption, and street drug use, and prenatal class attendance, by **residence RHA** for 2000 to 2002 combined are in Table A30.

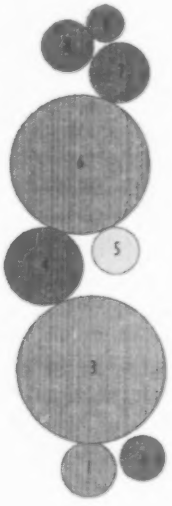
Smoking rates during pregnancy were lower than the provincial mean in the two major metropolitan areas (RHAs 3 and 6) as well as in RHA 1. Rates were higher than the provincial mean in all other RHAs except RHA 5 (see Map 5 and Appendix 3).

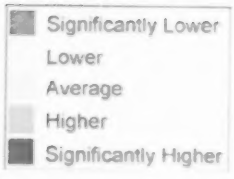
Rate of **alcohol consumption** during pregnancy was lower than the provincial mean in the two major metropolitan areas and RHA 5. The rate was higher than the provincial mean in all other RHAs.

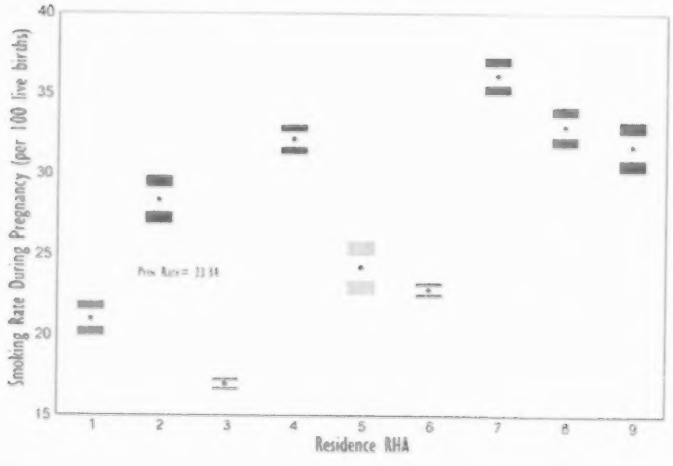
Street drug use during pregnancy was lower than the provincial mean in RHAs 1, 3, and 5, and higher than the provincial mean in RHAs 4, 6, 7, and 9.

Rates of **prenatal class attendance** prior to first live birth were lower than the provincial mean in RHAs 4 through 9, and higher than the provincial mean in RHAs 1 and 3.

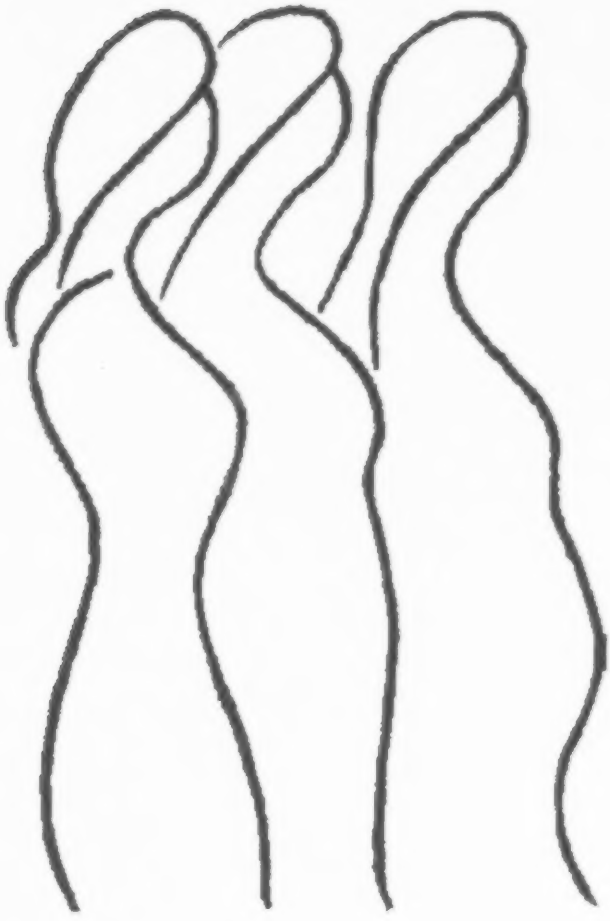
Map 5. Smoking Rate (per 100 live births) by Residence RHA, Alberta, 2000 – 2002 Combined







Births



Fertility rates

Introduction

Fertility rates have undergone dramatic changes over the last century, including the past decade. Alberta women are having fewer children than ever before.

Definitions

General fertility rate: Number of live births per 1,000 women aged 15-49 in a given year.

Age-specific fertility rate: Number of live births per 1,000 women in a given age group in a given year.

Total fertility rate: Number of live births per 1,000 women aged 15-49 over a lifetime. Total fertility rate provides an estimate of "the number of children who would be born to an average woman who experiences each of the age-specific fertility rates of a population in a given year as she progresses through her reproductive lifetime" (Young, 1998, p. 30). For example, a total fertility rate of 1,500 (per 1,000 women aged 15-49) would represent an average of 1.5 live births per woman. This rate is equal to the sum of the age-specific fertility rates for each year of age between 15 and 49.

All live births are included in fertility rates, regardless of birth weight or gestational age.

Background

Total fertility rates are a yearly estimate of fertility, based on the age-specific rates for a given year. Total fertility rates differ from **completed fertility rates**, which describe the actual number of children born to women who have completed their childbearing.

For several cohorts of Canadian women born in the 20th century, fertility declines significantly with cohort. Starting with the 1946 cohort, cohorts of Canadian women born earlier in the century have higher fertility than cohorts of women born later, prior to age 28. After age 28, younger cohorts have higher fertility than older cohorts, but the differences between cohorts are much smaller than prior to age 28. The end result is that younger cohorts have lower completed fertility. In other words, younger cohorts of women are not only delaying having children, but they are having fewer children on average. This trend is expected to continue (Statistics Canada, 2003c).

Alberta's total fertility rate is characteristically higher than Canada's, though both show steady decline through the 1990s followed by leveling off from 2000 on (see Figure 19). In 2002, Statistics Canada reported Canada's total fertility rate as 1,501 and Alberta's as 1,689 (Statistics Canada, 2004c).

Figure 19

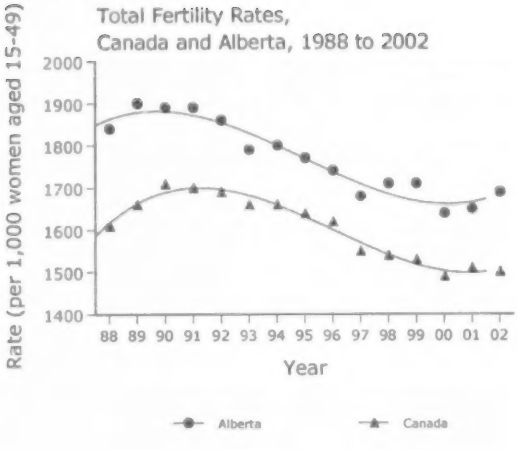
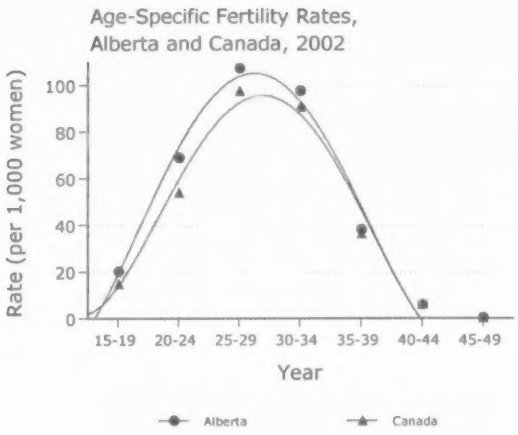


Figure 20



Fertility rates are higher in Alberta than in Canada for women under 35, while national and provincial fertility rates are very similar for women aged 35 and older (see Figure 20; Statistics Canada, 2004c).

Data Sources

- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.
- **Population estimates**: Alberta Health Care Insurance Plan Stakeholder Registration File, Alberta Health and Wellness.

Fertility Rates

Provincial Trends and Effects

Figure 21

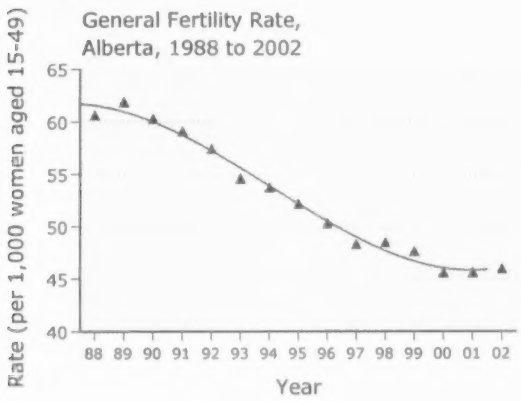
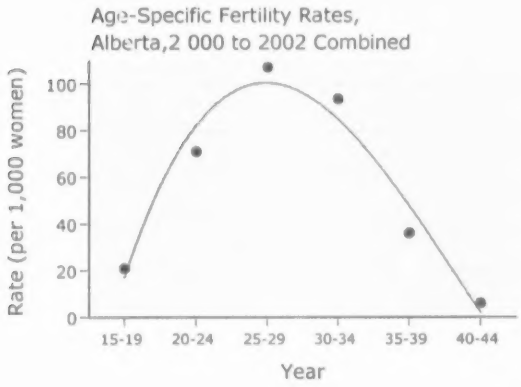


Figure 22



The **general fertility rate** (number of live births per 1,000 women aged 15-49 in a given year) declined markedly from 1988, although the rate was stable from 2000 to 2002 (see Table A1 and Figure 21). The 2002 rate was 46.0.

Total fertility rate (number of live births per 1,000 women aged 15-49 over a lifetime) was 1,686 in 2002. This rate has also stabilized over the period 2000 to 2002, after many years of decline (see Table A1).

Age-specific fertility rates are shown in Figure 22. Fertility peaks between 25 and 34 years of age.

As seen in Table 31, there is declining fertility in women under 30 years of age, and increasing fertility for women aged 30 to 44 years. In 1996, the age-specific fertility rate for women aged 30 to 34 years surpassed that of 20 to 24 year old women. Also since 1996, the age-specific fertility of women aged 35 to 39 years has surpassed that of women aged 15 to 19 years. Women aged 25-29 continue to have the highest fertility rates. Interestingly, the rate in this age group did not decline from 2000 to 2002, after steady decline for the previous 12 years .

Fertility Rates
Regional Trends and Effects

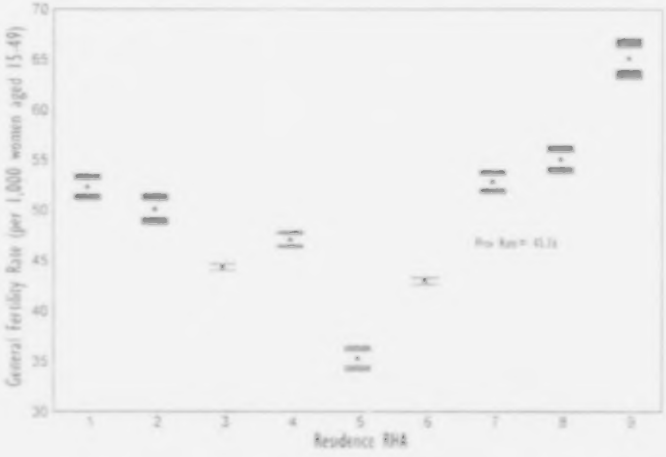
Fertility Rates

Regional Trends and Effects

Table A32 contains **general fertility rates** by **residence RHA**. The rate was lower than the provincial mean in the two major metropolitan areas (RHAs 3 and 6), as well as in RHA 5. The rate was higher than the provincial mean in all remaining RHAs (see Map 6 and Appendix 3).

Table A33 shows **age-specific fertility rates** for the RHAs for 2000 to 2002.

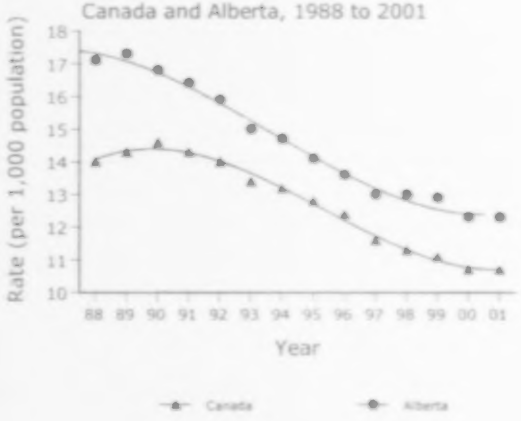
Map 6. General Fertility Rate (per 1,000 women aged 15-49) by Residence RHA, Alberta, 2000 – 2002 Combined



Live Births
Introduction

Figure 23

Crude Birth Rates,
Canada and Alberta, 1988 to 2001



Definitions

Live birth: "The complete expulsion or extraction from the mother, irrespective of the duration of the pregnancy, of a fetus in which, after expulsion or extraction, there is breathing, beating of the heart, pulsation of the umbilical cord or unmistakable movement of voluntary muscle, whether or not the umbilical cord has been cut or the placenta is attached." (Alberta Vital Statistics Act, RSA 1980 cV-4 s1).

Total births: The sum of live births and stillbirths in a given year.

Crude birth rate: Number of live births per 1,000 population in a given year.

Background

Crude birth rates are declining in both Canada and Alberta. In 2002, the Canadian crude birth rate was 10.5, and the Alberta rate was 12.4 (Statistics Canada, 2004c). As shown in Figure 23, the gap between the two rates was largest in the late 1980's and narrowed thereafter.

Data Sources

- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.
- **Stillbirths**: Vital Statistics Stillbirth Registration files, Department of Government Services, January 2004 Release.
- **Population estimates**: Alberta Health Care Insurance Plan Stakeholder Registration File, Alberta Health and Wellness.

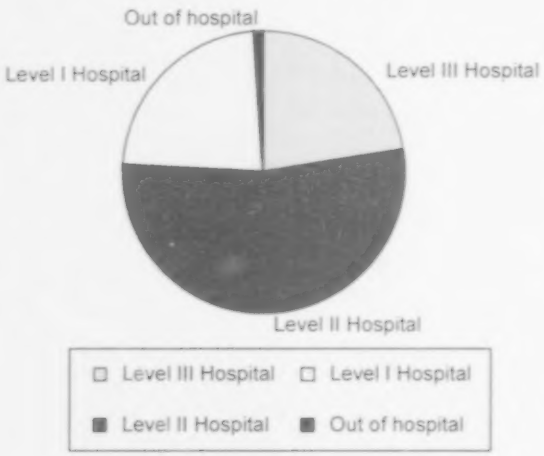
Live Births
Provincial Trends and Effects

There were 38,282 **live births** in 2002 (see Table A1).

Total births (including live births and stillbirths) for 1988 to 2002 by **level of hospital care** appear in Table A34. The percentage of births occurring in Level I and Level III hospitals decreased slightly between 1988 and 2002, while increasing in Level II hospitals. Between 1988 and 2002, the percentage of out-of-hospital births doubled, from 0.5% to 1.0%.

Figure 24

Live Births by Location,
Alberta, 2000 - 2002 Combined



For 2000 to 2002 combined, 22.6% of births occurred in Level III hospitals, 53.3% in Level II hospitals, 23.1% in Level I hospitals, and 1.0% out of hospital (Figure 24). See Health Canada (2000) for definition of levels of hospital care.

While the number of live births has declined over the last fifteen years, there has been a concurrent increase in the population of the province. Thus, the **crude birth rate** (number of live births per 1,000 population) has declined overall, though it was stable between 2000 and 2002. The rate was 12.4 in 2002 (see Table A1).

Live birth counts by facility and residence RHA appear in Table A32.

Birth Weight
Small-for-Gestational-Age and Low Birth Weight
Introduction

Small-for-gestational-age infants may or may not be low birth weight, and they may or may not be preterm. Sorting out the effects of these different outcomes is a challenging task.

Definitions

Small-for-gestational-age infants have a birth weight below the 10th percentile of appropriate for gestational age infants (see Alberta norms in Robertson, Svenson, & Kyle, 2002). Use of the 3rd percentile (rather than the 10th) for classification of births as small-for-gestational-age has also been suggested (McIntyre, Bloom, Casey, and Leveno, 1999).

Small-for-gestational-age rate: Number of live small-for-gestational-age singleton births per 100 live births. The standard way to calculate the rate is to use singleton small-for-gestational-age births, divided by singleton live births. We have also reported some rates for multiple small-for-gestational-age births, per 100 multiple live births.

Low birth weight infants have a birth weight less than 2,500 grams.

Low birth weight rate: Number of live low birth weight infants per 100 live births. Since 1990, the low birth weight rate has included live newborns weighing less than 500 grams due to changes in registration and reporting (Svenson, Schopflocher, Sauve, and Robertson, 1998) and improvements in and access to perinatal care.

Background

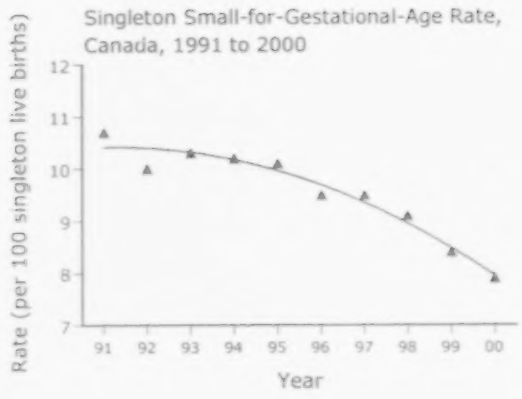
Low birth weight infants may be small-for-gestational-age, or preterm, or both (see Wen, Kramer, Platt, et al., 2003 and Wilcox, 2001 for discussions). These types of low birth weight likely have both different underlying causes and different effects on later development (Millar & Chen, 1998; Wallace & McCarton, 1997). Care should be taken in the interpretation of simple low birth weight rates, which reflect the combined effects of restricted growth for gestational age and preterm birth.

Small-for-gestational-age births are associated with a number of potentially modifiable risk factors, including maternal prenatal smoking, multiple pregnancy (in pregnancies involving assisted reproduction), low pre-pregnancy weight, inadequate prenatal weight gain, and delayed childbirth. These risk factors contribute to approximately 30% of small-for-gestational-age births (Newburn-Cook, White, Svenson, Demianczuk, Bott, & Edwards, 2002). Smoking is the biggest contributor to fetal growth restriction (Health Canada, 2003).

A 1998 study estimated that the care of low birth weight infants cost $13 billion per year in Canada, and that $2 billion could be saved annually if low birth weight births decreased by 20% (Moutquin and Lalonde, 1998, cited in Newburn-Cook et al., 2002).

Low birth weight (including both preterm and small-for-gestational-age births) is correlated with fetal, neonatal and long-term complications, including physical, cognitive, behavioural, and educational impairments (Anderson, Doyle, and the Victorian Infant Collaborative Study Group, 2003; Jarvis, Glinianaia, Torrioli, et al., 2003; Millar & Chen, 1998), and fetal and infant mortality (Chen et al., 1998; Nault, 1997).

Figure 25



As seen in Figure 25, the singleton small-for-gestational-age rate is declining in Canada. The singleton small-for-gestational-age rate in Canada in 2000 was 7.9, and the Alberta rate was 8.6 (Health Canada, 2003; Health Canada data for Alberta are only available for 2000). Health Canada uses different gestational age weight norms than those used by Alberta Health and Wellness to generate the data provided on the following pages. Thus, the Alberta rate for 2000 reported above is not comparable to the rates reported on pages 63 and 64).

In Canada in 2002, mean birth weight was 3,403 grams; the mean for Alberta was 3,380 grams (Statistics Canada, 2004c).

The Canadian low birth weight rate was 5.7 in 2002, compared with 6.5 in Alberta. (Statistics Canada, 2004c).

Data Sources

- **Birth weight data, live birth data**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.
- **Gestational age birth weight norms**: Robertson, Svenson, & Kyle, 2002.

Birth Weight
Small-for-Gestational-Age and Low Birth Weight
Provincial Trends and Effects

Figure 26

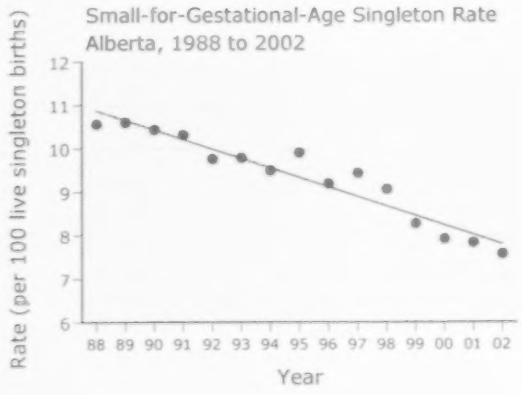
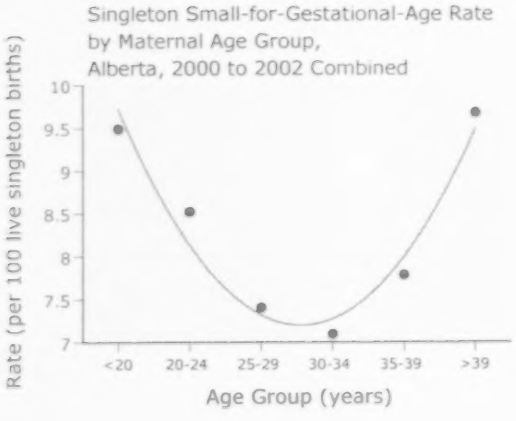


Figure 27



Time trend data for several categories of birth weight appear in Table A35.

Small-for–Gestational-Age Rates

There was a significant linear decline in the small-for-gestational-age **singleton rate** (per 100 live singleton births) between 1988 and 2002 (see Table A1 and Figure 26). The 2002 rate was 7.6.

Small-for-gestational-age rates by **plurality and preterm/term** are in Table A36. Decreasing trends occurred only in term singleton and term multiple births. There were no significant trends in preterm singleton or preterm multiple rates between 1988 and 2002.

The rate of singleton small-for-gestational-age births varies with **maternal age**, as seen in Figure 27 (and Table A37). The 2000 to 2002 combined rate was lowest for mothers aged 25 to 39.

Low Birth Weight Rates

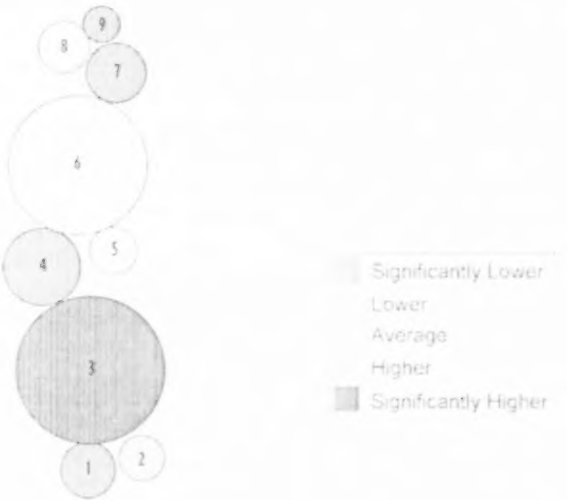
The **low birth weight** rate was stable between 1995 and 2001, then increased to 6.5 (per 100 live births) in 2002. Overall, there was a significant linear increasing trend from 1988 to 2002 (see Table A1).

Low birth weight rates vary greatly with plurality and length of gestation, from 1.7 (per 100 live births) for singleton term births to 77.9 for multiple preterm births in 2002 (see Table A38).

Low birth weight rates change with **maternal age**, as seen in Table A39. The low birth weight rate is lowest for mothers aged 25 to 34 years and is noticeably higher for mothers aged 35 and older.

Birth Weight
Small-for-Gestational-Age and Low Birth Weight
Regional Trends and Effects

Map 7. Small-for-Gestational-Age Rate (per 100 live singleton births) by Residence RHA, Alberta, 2000 – 2002 Combined



Singleton small-for-gestational-age births for **residence and facility RHAs** for 1988 to 2002 are in Table A40.

In Table A41, **three-year combined rates for residence and facility RHAs** for 2000 to 2002 are provided. As shown in Map 7 (see also Appendix 3), the singleton small-for-gestational-age rate was significantly higher than the provincial mean in RHA 3, and significantly lower than the provincial mean in RHAs 1, 4, 7, and 9.

Low birth weight births for **residence and facility RHAs** for 1988 to 2002 are in Table A42.

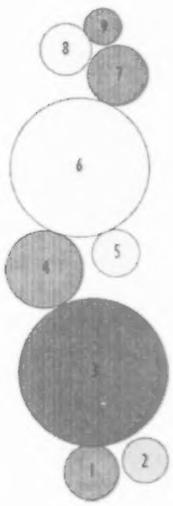
Birth Weight
Small-for-Gestational-Age and Low Birth Weight
Regional Trends and Effects

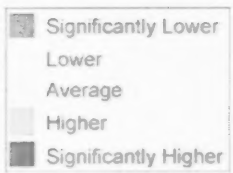
Map 7. Small-for-Gestational-Age Rate (per 100 live singleton births) by Residence RHA, Alberta, 2000 – 2002 Combined

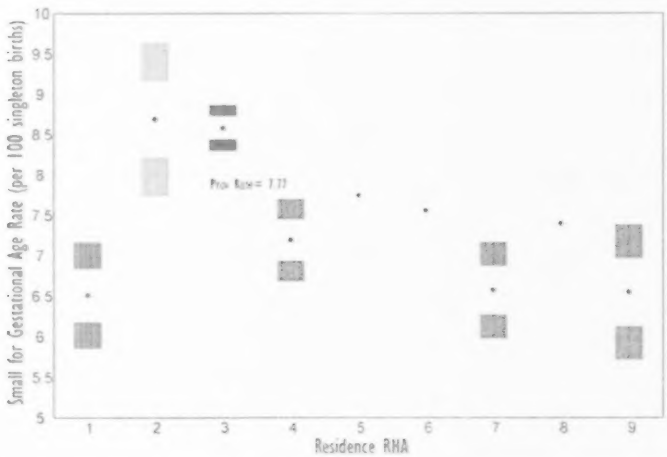
Singleton small-for-gestational-age births for **residence and facility RHAs** for 1988 to 2002 are in Table A40.

In Table A41, **three-year combined rates for residence and facility RHAs** for 2000 to 2002 are provided. As shown in Map 7 (see also Appendix 3), the singleton small-for-gestational-age rate was significantly higher than the provincial mean in RHA 3, and significantly lower than the provincial mean in RHAs 1, 4, 7, and 9.

Low birth weight births for **residence and facility RHAs** for 1988 to 2002 are in Table A42.



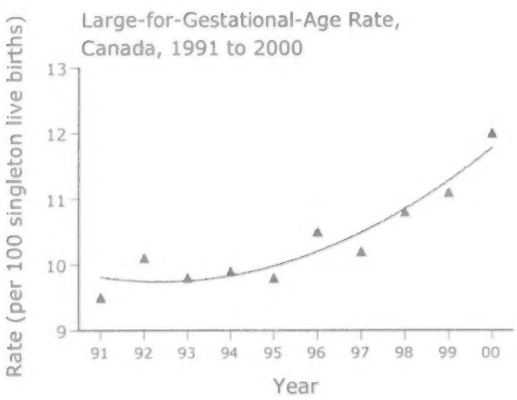




Birth Weight
Large-for-Gestational-Age and High Birth Weight
Introduction

Large-for-gestational-age infants are becoming more common. Long-term consequences are not well-documented, although there are pregnancy and delivery complications associated with macrosomia.

Figure 28



Definitions

Large-for-gestational-age infants have a birth weight above the 90th percentile of appropriate for gestational age infants (see Alberta norms in Robertson, Svenson, & Kyle, 2002 for Alberta norms).

Large-for-gestational-age rate: Number of live large-for-gestational-age births per 100 live singleton births. The standard way to calculate the rate is to use singleton large-for-gestational-age births, divided by singleton live births. We have also reported some rates for multiple large-for-gestational-age births, per 100 multiple live births.

High birth weight infants weigh 4,000 grams or more at birth. Opinions vary as to what birth weight is best termed "high birth weight". Some sources use 4,500 grams as the cutoff. Macrosomia is another term for high birth weight.

High birth weight rate: Number of live high birth weight infants per 100 live births.

Background

Macrosomia increases the risk of cephalopelvic disproportion and shoulder dystocia, and consequently results in increased risk of operative vaginal delivery, cesarean section, maternal tissue trauma, infant morbidity (such as brachial plexus injury), and infant mortality (Ferber, 2000; Rodrigues, Robinson, Kramer, & Gray-Donald, 2000). A reliable method of predicting birth weight prenatally has proven elusive, thwarting attempts to predict cases of shoulder dystocia related to macrosomia (Sandmire and Woolley, 1998).

Risk factors for macrosomia include maternal obesity, excessive maternal weight gain, maternal diabetes (whether pre-existing or gestational), prolonged pregnancy, (Haram, Pirhonen, and Bergsjo, 2002), and First Nations ethnicity (Armstrong, Robinson, and Gray-Donald (1998).

In 2000, the large-for-gestational-age rate was 12.0 (per 100 singleton live births) in Canada, and 11.2 in Alberta. Figure 28 shows the large-for-gestational-age trend in Canada from 1991 to 2000. The rate was stable between 1991 and 1995, and has increased since then (Health Canada, 2003; Health Canada data for Alberta are only available for 2000). Health Canada uses different gestational age weight norms than those used by Alberta Health and Wellness to generate the data provided on the following pages.

Thus, the Alberta rate for 2000 reported above is not comparable to the rates reported on pages 67 and 68).

Mean birth weight in Canada in 2002 was 3,403 grams; the Alberta mean was 3,380 (Statistics Canada, 2004c).

The high birth weight rates for Canada and Alberta in 2002 were 13.2 and 12.5 respectively (Statistics Canada, 2004c).

Data Sources

- **Birth weight data, live birth data**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.
- **Gestational age birth weight norms**: Robertson, Svenson, & Kyle, 2002.

Birth Weight
Large-for-Gestational-Age and High Birth Weight
Provincial Trends and Effects

Figure 29

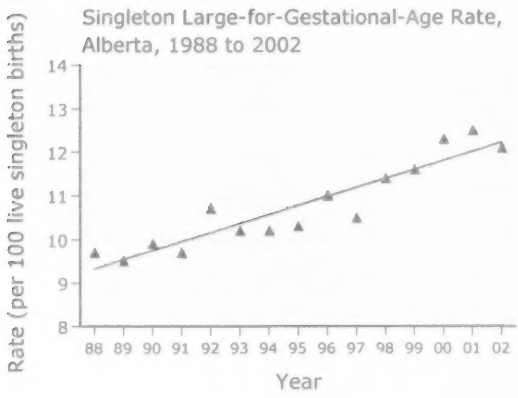
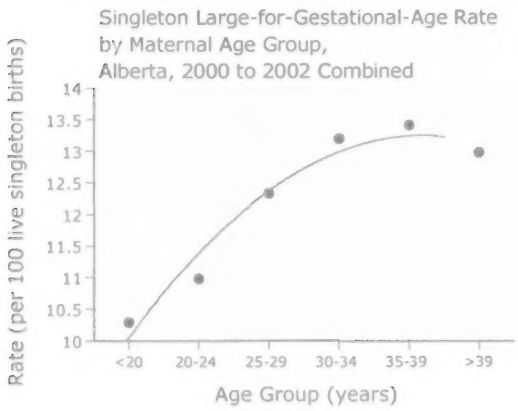


Figure 30



There are linearly increasing time trends in **mean birth weight** for term and for singleton births in Alberta (see Table A43). Between 1988 and 2002, mean birth weight increased from 3,429 to 3,478 grams for term births and from 3,375 to 3,415 grams for singleton births. The overall mean for live births increased significantly from 3,355 to 3,380 grams between 1988 and 2002. There were no significant time trends in mean birth weight for multiple or preterm births.

Large-for-Gestational-Age Rates

Time trend information on **singleton large-for-gestational-age** infants is provided in Table A1 and Figure 29. The large-for-gestational-age rate increased from 9.7 per 100 singleton births in 1988 to 12.1 in 2002. The rate was stable between 2000 and 2002.

Large-for-gestational-age rates by **plurality and preterm/term** are in Table A44. For term singleton large-for-gestational-age births, there was significant linear increasing trend. For preterm singleton large-for-gestational-age births, there was a significant quadratic trend, showing a pattern of increase from 1995 on. An increasing trend for multiple large-for-gestational-age births occurred only in term multiple births.

In 2000 to 2002 combined, singleton large-for-gestational-age infants were most likely to be born to mothers aged 30 and older. The rate was lowest for teenage mothers and increased steadily with **maternal age** under 30 years (see Figure 30 and Table A45).

High Birth Weight Rates

See Table A35 for time trend data on birth weights of 4,000 or more grams and 4,500 or more grams.

The **high birth weight** rate was stable for several years, but increased between 1998 and 2001 before dropping to 12.5 (per 100 live births) in 2002 (see Table A1). Almost all high birth weight births (over 99%) are singleton term births, and the increasing trend is therefore due to increases over time in singleton term high birth weight births.

Maternal age is related to the high birth weight rate. High birth weight babies are most likely to be born to mothers 30 to 34 years of age, and least likely to be born to teenage mothers (see Table A46).

Birth Weight
Large-for-Gestational-Age and High Birth Weight
Regional Trends and Effects

Map 8. Large-for-Gestational-Age Rate (per 100 live singleton births) by Residence RHA, Alberta, 2000 – 2002 Combined

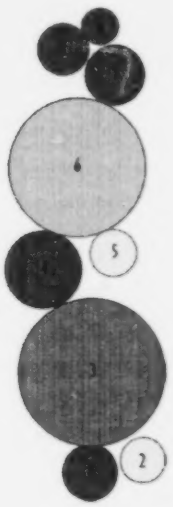
Birth Weight
Large-for-Gestational-Age and High Birth Weight
Regional Trends and Effects

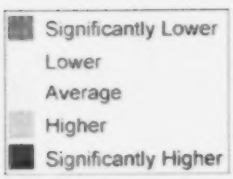
Map 8. Large-for-Gestational-Age Rate (per 100 live singleton births) by Residence RHA, Alberta, 2000 – 2002 Combined

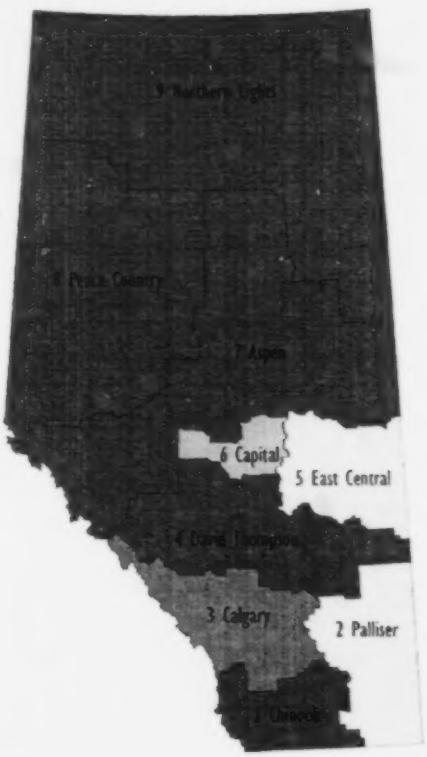
Singleton large-for-gestational-age births for **residence and facility RHAs** for 1988 to 2002 are in Table A47.

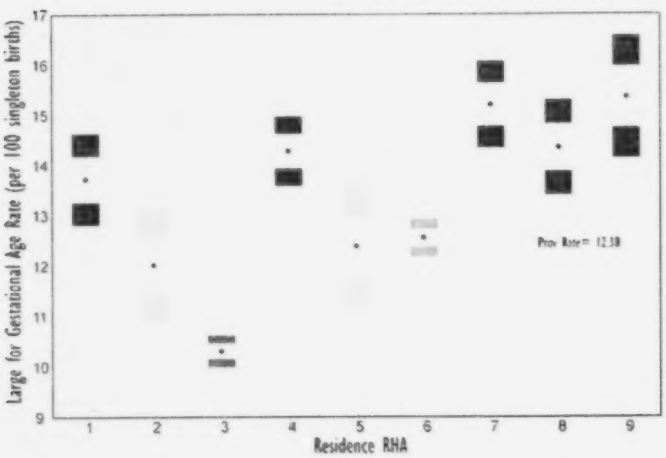
Combined singleton large-for-gestational age regional data for 2000 to 2002 are in Table A42, and appear in Map 8 (see Appendix 3). Residence RHA 3 had a **singleton large-for-gestational-age rate** that was lower than the provincial mean, while RHAs 1, 4, 7, 8, and 9 had rates higher than the provincial mean.

High birth weight rates for **residence and facility RHAs** for 1988 to 2002 are in Table A48.









Preterm Births

Introduction

The rate of preterm birth is increasing in many jurisdictions, including Alberta, Canada, and internationally. Preterm birth is one of the most important challenges to perinatal health.

In recent years, the proportion of surviving infants at the limits of viability has increased. Few babies born before 23 weeks gestation survive, however.

Definitions

Preterm births occur prior to 37 completed weeks of gestation (Dorland, 2000). Gestation is measured in weeks from the date of the last menstrual period of the mother.

Preterm birth rate: Number of preterm births per 100 live births in a given year.

Background

Preterm births account for the large majority of **neonatal deaths** and about half of cases of congenital neurological disability (Slattery and Morrison, 2002). Although neonatal mortality due to preterm birth has declined substantially in recent decades, there is a high rate of **morbidity** (both short term and long term), and the cost to the health care system is large (Gilbert, Nesbitt, and Danielson, 2003). Births prior to 32 weeks gestation account for most of the mortality and morbidity due to preterm birth (Slattery and Morrison, 2002).

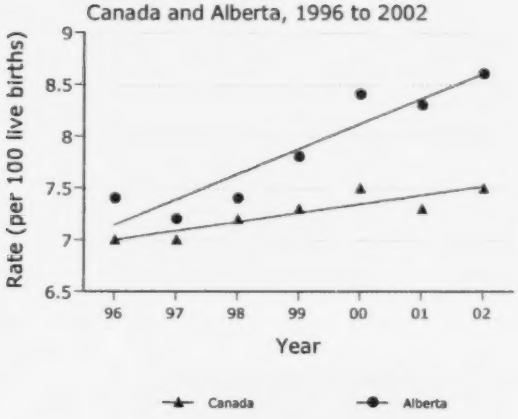
In the short term, the primary **morbidity** associated with preterm birth is respiratory distress syndrome. In the long term, morbidities are usually neurosensory (e.g., cerebral palsy, visual system disorders, hearing disorders), neurocognitive (e.g., lower IQ, lower academic achievement), and respiratory (Gilbert, Nesbitt, and Danielson, 2003; Kramer, Platt, Yang, Joseph, Wen, Morin, & Usher, 1998; Slattery and Morrison, 2002). Degree of disability generally increases with decreasing gestational age at birth.

Risk factors for preterm birth include genital tract infection, smoking, preeclampsia, incompetent cervix, prior preterm birth, placental abruption, high maternal age, assisted reproduction, multiple pregnancy, low socioeconomic status, substance abuse, and psychological factors such as stress and depression (Health Canada, 2002a; Slattery and Morrison, 2002). Modifiable risk factors associated with preterm delivery include smoking, drug use, delayed childbearing, and maternal anemia; these factors were found in one study to contribute approximately 11% of the risk of preterm delivery (Newburn-Cook et al., 2002).

Prevention of preterm birth has proven to be difficult. Many interventions have been shown to be ineffectual, and it has been argued that the most rational approach to preventing preterm birth is to begin to increase understanding of mechanisms resulting in preterm birth (Goldenberg & Rouse, 1998).

Figure 31

Preterm Birth Rates,
Canada and Alberta, 1996 to 2002



Preterm birth rates are increasing in both Canada and Alberta, but the rate of increase is greater in Alberta, as seen in Figure 31. The Canadian preterm rate for 2002 was 7.5; the Alberta rate was 8.6 (Statistics Canada, 2004c).

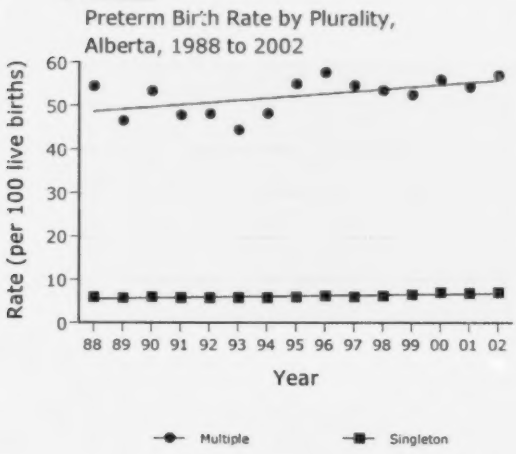
Data Sources

- **Gestational age data, live birth data**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.

Preterm Births

Provincial Trends and Effects

Figure 32

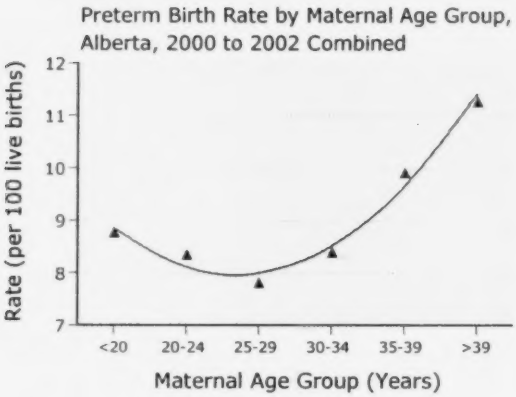


The **preterm birth rate** (per 100 live births) reached a 15-year high of 8.6 in 2002 (see Table A1) and follows a significant linearly increasing trend. As shown in Figure 32 and Table A49, both singleton and multiple preterm birth rates have increased over time. In 2002, 7.0% of singleton births and 57.0% of multiple births were preterm.

Table A50 categorizes preterm births according to **plurality** and **small-for-gestational-age** status. The increase in singleton preterm births appears regardless of small-for-gestational-age status. For multiple births, the preterm small-for-gestational-age rate shows an increasing linear trend. The preterm rate for multiple births that are not small-for-gestational-age does not show a significant trend.

Maternal age is clearly related to the preterm birth rate (see Table A51). As can be seen in Figure 33, preterm births are least common for mothers 25 to 29 years old. The rate is elevated for mothers 35 years old and older.

Figure 33



Preterm Births

Regional Trends and Effects

Map 9. Preterm Birth Rate (per 100 live births) by Residence RHA, Alberta, 2000 – 2002 Combined

Preterm births for 1988 to 2002 for **residence and facility RHAs** are provided in Table A52. Preterm rates for both residence and facility RHAs for 2000 to 2002 combined are presented in Table A41.

Map 9 shows the 2000 to 2002 combined data for **residence RHAs** (also see Appendix 3). The preterm birth rate is lower than the provincial mean in RHAs 1, 2, 4, 8, and 9, and higher than the provincial mean in the major metropolitan areas (RHAs 3 and 6).

Significantly Lower
Lower
Average
Higher
Significantly Higher

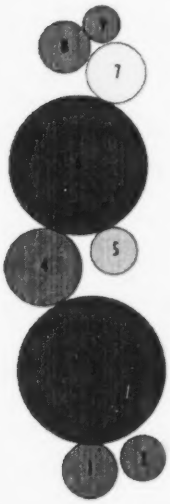
Preterm Births

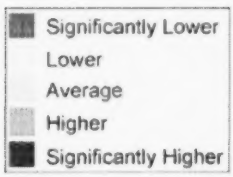
Regional Trends and Effects

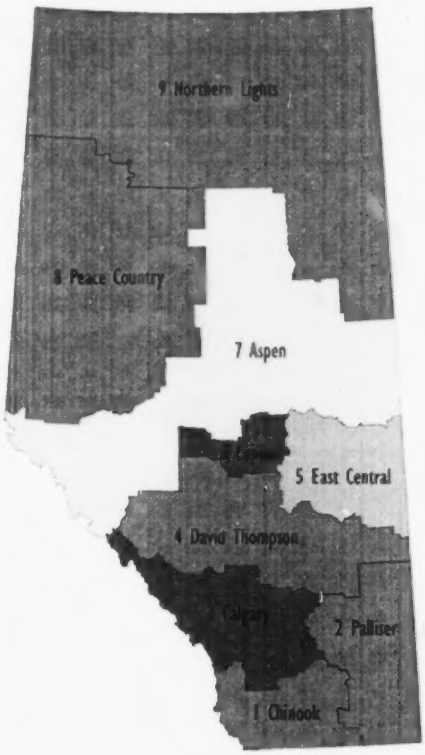
Preterm births for 1988 to 2002 for **residence and facility RHAs** are provided in Table A52. Preterm rates for both residence and facility RHAs for 2000 to 2002 combined are presented in Table A41.

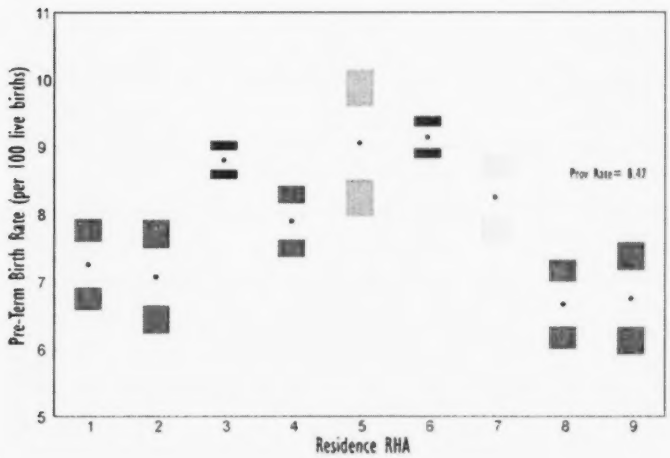
Map 9 shows the 2000 to 2002 combined data for **residence RHAs** (also see Appendix 3). The preterm birth rate is lower than the provincial mean in RHAs 1, 2, 4, 8, and 9, and higher than the provincial mean in the major metropolitan areas (RHAs 3 and 6).

Map 9. Preterm Birth Rate (per 100 live births) by Residence RHA, Alberta, 2000 – 2002 Combined









Multiple Births

Introduction

Rising maternal age and growing use of assisted reproduction have resulted in increasing rates of multiple birth. Multiple pregnancies and births are higher risk than singleton pregnancies and births.

Definitions

Multiple pregnancy: Pregnancy in which two or more fetuses exist simultaneously (Dorland, 2000).

Multiple birth: The birth of two or more offspring produced in the same gestation period (Dorland, 2000). This includes both live births and stillbirths.

Multiple birth rate: Number of live multiple births per 100 live births.

Background

Multiple pregnancies are more common in older mothers. They are also a possible outcome of ovulation-stimulating medications and assisted reproductive technologies. Increasing **maternal age** and growing use of **reproductive technologies** have together resulted in escalating rates of multiple birth.

Multiple pregnancy is associated with a higher incidence of maternal hypertension, preeclampsia, eclampsia, post-partum hemorrhage, and cesarean section (Alexander, Kogan, Martin, & Papiernik, 1998; Senat, Ancel, Bouvier-Colle, & Breart, 1998).

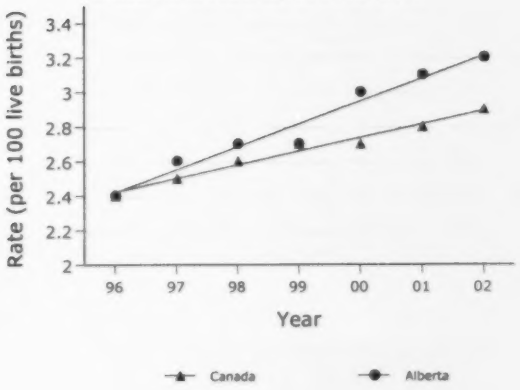
Twins carry increased risk of cerebral palsy and major handicaps (Papiernik, Keith, Oleszczuk, and Cervantes, 1998), congenital anomalies of the central nervous system, the cardiovascular system, and the gastrointestinal tract (Luke, 1998) and perinatal death (Alexander et al., 1998; Grobman and Peaceman, 1998). Relative to dizygotic (fraternal) twins, monozygotic (identical) twins have increased risk of placental and cord complications, respiratory distress syndrome, and congenital anomalies (Luke, 1998).

Preterm and **low birth weight** or **small-for-gestational-age** infants are much more common in multiple births than in singleton births (Luke, 1998; Tough et al., 1999), and much of the increased morbidity and mortality seen in multiple births appears to be due to preterm birth or fetal growth restriction rather than plurality alone (Luke, 1998). Fetal growth discordance between multiples is a risk factor for preterm birth (Cooperstock, Tummaru, Bakewell, and Schramm, 2000).

Perinatal mortality rates reach their lowest level at 38 weeks gestation for twins, compared with 40 weeks for singletons, providing support for the argument that the definition of preterm birth should be different for multiple births than for singleton births (Alexander et al., 1998; Kiely, 1998; Luke, 1998).

Figure 34

Multiple Birth Rates,
Canada and Alberta, 1996 to 2002



Prior to 2000, Canada and Alberta had very similar rates of multiple birth. In 2000, the Alberta rate rose, creating a gap between Alberta's and Canada's rates (see Figure 34). In 2002, the multiple birth rate was 2.9 in Canada and 3.2 in Alberta (Statistics Canada, 2004c).

Data Sources

- **Multiple births, live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release

Multiple Births

Provincial Trends and Effects

Figure 35

Multiple Birth Rate,
Alberta, 1988 to 2002

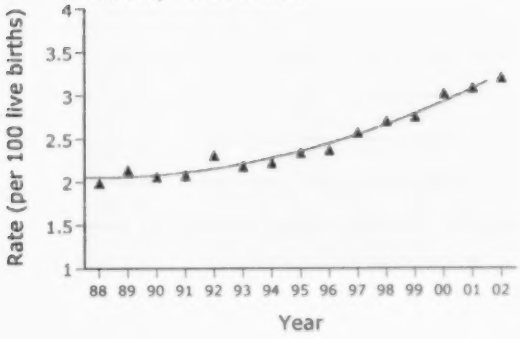
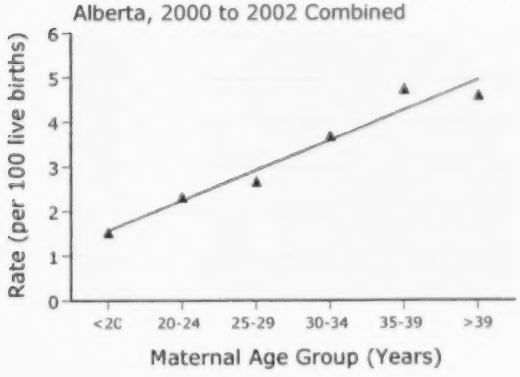


Figure 36

Multiple Birth Rate by Maternal Age Group,
Alberta, 2000 to 2002 Combined



The **multiple birth rate** (per 100 live births) fluctuated between 1.9 and 2.1 from 1986 to 1991, between 2.2 and 2.3 from 1992 to 1995, and increased markedly from 2.4 in 1996 to 3.2 in 2002 (see Table A1 and Figure 35).

In 2002, 97.2% of multiple live births were twin births, 2.4% were triplet births, and 0.3% were quadruplets (see Table A53).

Multiple birth rates by **maternal age** are provided in Table A54 (rates are not provided for mothers over 39 years prior to 1997, as there were too few multiple births in this age group to provide reliable rate estimates).

- For 2000 to 2002 combined, multiple birth rates varied from 1.5 for mothers under 20 years of age to 4.7 for mothers aged 35 to 39. Multiple birth rates by maternal age groups for 2000 to 2002 combined are shown in Figure 36. The multiple birth rate increased linearly with increasing maternal age.
- For 1988 to 2002 combined, linear trends over time were significant for all age groups of mothers except those under 20 years of age. That is, multiple births are increasingly frequent in all age groups except teenagers.

The **small-for-gestational-age rate** was 9.5 per 100 live multiple preterm births and 7.8 per 100 live multiple term births in 2002 (see Table A36). The rate for multiple term births decreased from 1988 to 2002. There was no significant time trend in the small-for-gestational-age rate for multiple preterm births.

In 2002, 57.0 of every 100 live multiple births was a **preterm birth**, compared with 7.0 out of every 100 live singleton births (see Table A49).

The **perinatal death rate** for multiple births was 58.9 (per 1,000 total multiple births) in 2002.

- Time trends for 1982 to 2002 for multiple pregnancies, multiple births, and perinatal deaths of multiple births are shown in Table A55.
- There is a significant linear decreasing trend in perinatal deaths for multiple births from 1982 to 2002.

Multiple Births
Regional Trends and Effects

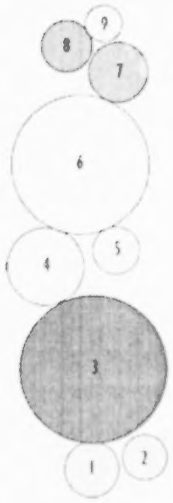
Map 10. Multiple Birth Rate (per 100 live births) by Residence RHA, Alberta, 2000 – 2002 Combined

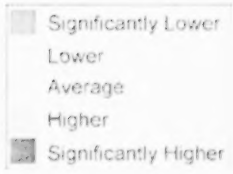
Multiple births for each of the **residence and facility RHAs** for 1988 to 2002 are detailed in Table A56.

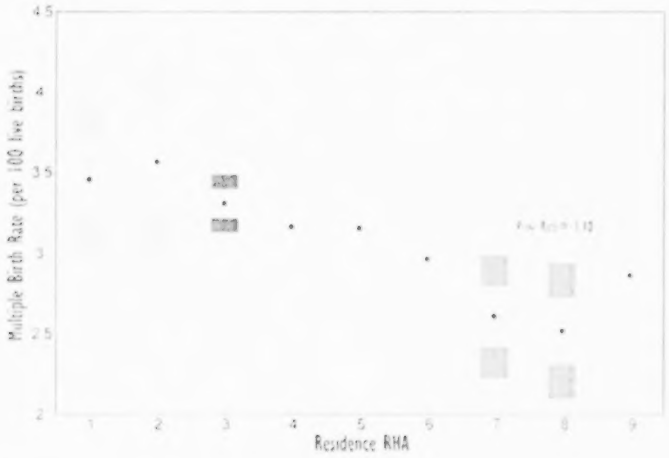
Combined data for 2000 to 2002 for **residence RHAs** show that multiple birth rates vary with region (see Table A41). RHAs 7 and 8 had lower-than-average multiple birth rates and RHA 3 had a higher-than-average multiple birth rate. The rate did not differ from the provincial mean in the other regions (see Map 10 and Appendix 3).

Rates for **facility RHAs** for 2000 to 2002 combined are also provided in Table A41. The rates show a clear tendency for multiple births to be delivered in the major metropolitan centres. (RHAs 3 and 6). Note that *these rates must be interpreted with caution* due to the low number of cases involved.

Multiple pregnancies, multiple births and perinatal deaths of multiple births are detailed for 2001 and 2002 for each of the **facility RHAs** in Tables A57 and A58. Note that *these rates must be interpreted with caution* due to the low number of cases involved.







Multiple Births
Regional Trends and Effects

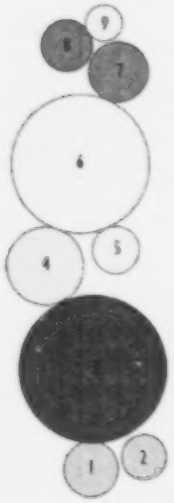
Map 10. Multiple Birth Rate (per 100 live births) by Residence RHA, Alberta, 2000 – 2002 Combined

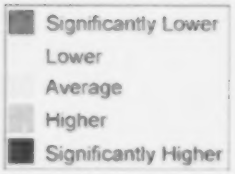
Multiple births for each of the **residence and facility RHAs** for 1988 to 2002 are detailed in Table A56.

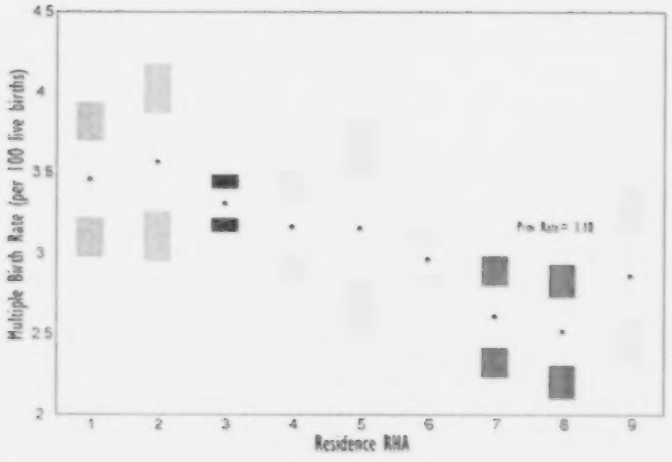
Combined data for 2000 to 2002 for **residence RHAs** show that multiple birth rates vary with region (see Table A41). RHAs 7 and 8 had lower-than-average multiple birth rates and RHA 3 had a higher-than-average multiple birth rate. The rate did not differ from the provincial mean in the other regions (see Map 10 and Appendix 3).

Rates for **facility RHAs** for 2000 to 2002 combined are also provided in Table A41. The rates show a clear tendency for multiple births to be delivered in the major metropolitan centres. (RHAs 3 and 6). Note that *these rates must be interpreted with caution* due to the low number of cases involved.

Multiple pregnancies, multiple births and perinatal deaths of multiple births are detailed for 2001 and 2002 for each of the **facility RHAs** in Tables A57 and A58. Note that *these rates must be interpreted with caution* due to the low number of cases involved.







Infant Morbidity

Introduction

Respiratory distress syndrome affects mainly preterm infants. Congenital anomalies are associated with a wide variety of causal factors.

Definitions

Respiratory distress syndrome: A lung disorder that causes difficulty in breathing; due to lack of surfactant in an infant's lungs. Respiratory distress syndrome results in a life-threatening deficiency of oxygen in the blood (Morgan, 1990).
Respiratory distress syndrome rate: Number of cases of respiratory distress syndrome per 100 hospital deliveries in a given year.

Congenital anomaly: Structural or chemical imperfection present at birth (Dorland, 2000).

Neural tube defects included in the following analyses occur when the neural tube fails to close properly during early pregnancy (25 to 27 days after conception). They are anencephaly (lack of cranial vault and cerebral hemispheres), spina bifida (open and closed defects in the spinal column), and encephalocele (lack of closure in the skull).
Neural tube defect rate: Number of neural tube defects per 1,000 total births (total births includes live births and stillbirths) in a given year.

Heart septal defect: A disorder of the heart in which the septum fails to develop properly, allowing deoxygenated blood to flow to the lungs (Morgan, 1990).
Heart septal defect rate: Number of heart septal defects per 1,000 total births (total births includes live births and stillbirths) in a given year.

Down syndrome: A chromosome disorder characterized by a large, anteroposteriorly flattened skull, short, flat-bridged nose, epicanthal fold, short phalanges, widened spaces between the first and second digits of hands and feet, and moderate to severe mental retardation. The chromosomal aberration is trisomy of chromosome 21 (Dorland, 2000).
Down syndrome rate: Number of cases of down syndrome per 1,000 total births (total births includes live births and stillbirths) in a given year.

Background

Respiratory distress syndrome of the newborn mainly affects preterm babies, due to pulmonary immaturity (primarily of the surfactant system) prior to approximately 36 weeks gestation. Early diagnosis and treatment of this condition is necessary to avoid chronic complications such as bronchopulmonary dysplasia, which can lead to prolonged hospitalization and the need for assisted

ventilation. Asthma rates between the age of one and four are elevated in children who had respiratory distress syndrome as infants. Although mortality and morbidity have been greatly reduced by the advent of antenatal steroidal therapy and surfactant treatments, respiratory distress syndrome will remain a concern as long as preterm birth rates remain high (Health Canada, 2001).

Maternal **risk factors** for congenital anomalies include high maternal age, obesity, epilepsy controlled with anticonvulsant medications, and insulin-dependent diabetes (Health Canada, 2002b).

Some congenital anomalies are preventable. Primary **prevention** strategies include folic acid consumption prior to and shortly after conception, rubella immunization prior to pregnancy, and avoidance of drug and alcohol use. Secondary strategies include pregnancy termination and in-utero treatment (Health Canada, 2002b).

The risk of Down syndrome increases with increasing **maternal age**. There is also an increased risk for couples who had a previous pregnancy affected by Down syndrome. Children with Down syndrome have high rates of a variety of morbidities as well as elevated mortality rates; 40% have congenital heart defects. Down syndrome adults require assisted living arrangements and often develop Alzheimer's disease in middle age (Health Canada, 2002b).

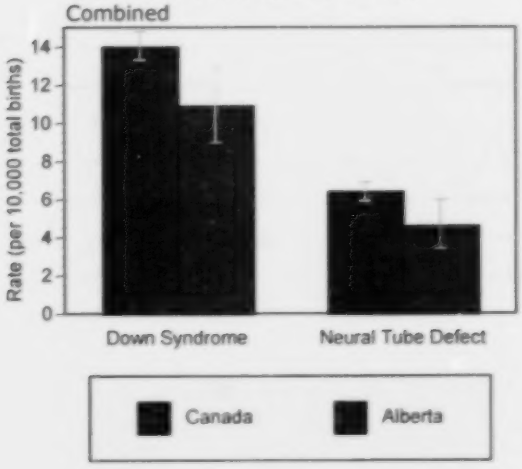
Possible effects of **neural tube disorders** include miscarriage, stillbirth, infant or early childhood death, or lifelong disability (Health Canada, 2002b). Spina bifida can result in a wide spectrum of disability, from no disability to hydrocephalus, scoliosis, paralysis, incontinence, mental handicap or death (Health Canada, 2002b). Maternal folic acid supplementation in the periconceptual period (prior to and shortly after conception) reduces the occurrence of neural tube defects by up to 70% (Reisch & Flynn, 2002). Furthermore, folic acid supplementation appears to be protective against some cardiac and urologic anomalies as well (McDonald, Ferguson, Tam, Lougheed, & Walker, 2003).

Heart septal defects are a relatively minor anomaly, and if necessary can often be repaired in infancy or early childhood. Untreated septal defects can lead to pulmonary hypertension.

For 2000 and 2001 combined, the rates of respiratory distress syndrome (per 1,000 hospital live births) were 11.6 and 13.1 for Canada and Alberta, respectively (Health Canada, 2003). Health Canada uses different data definitions than those used by Alberta

Figure 37

Down Syndrome and Neural Tube Defect Rates (with 95% confidence intervals), Canada and Alberta, 1997 to 1999 Combined



Health and Wellness to generate the data provided on the following pages. Thus, the Alberta rate for 2000 and 2001 combined, reported above, is not comparable to the rates reported on page 80).

In Canada, 2 to 3% of babies born each year have a major congenital anomaly. The Canadian down syndrome rate for 1997 to 1999 combined was 14.0 per 10,000 births; the Alberta rate for the same period was 10.9. The neural tube defect rates for 1997 to 1999 combined were 6.4 and 4.6 in Canada and Alberta, respectively (Health Canada, 2002b; see Figure 37).

Data Sources

- **Respiratory distress syndrome data**: Fee-for-Service Claims Files, Ambulatory Care Classification System, and Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness. Codes used are detailed in Appendix 2.
- **Congenital Anomalies data**: Alberta Congenital Anomalies Surveillance System, 1980-2000, February 2002 release. Codes used are detailed in Appendix 2.
- Note that maternal age data for congenital anomalies are derived by linkage with Vital Statistics databases. Stillbirths are not available in these databases, so maternal age rates are calculated relative to live births only. Time trends do not require data linkage, and thus are calculated relative to total births (live births + stillbirths).
- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.
- See the Methodology and Limitations section in the Introduction (page 14) for a caution regarding comparison of 2002 Respiratory Distress Syndrome data to data from prior years due to changes in data coding systems

Infant Morbidity
Provincial Trends and Effects

About 2% of infants born in Alberta have respiratory distress syndrome. About 3% of Alberta-born infants have a congenital anomaly.

Figure 38

Congenital Anomalies Rate, Alberta, 1988 to 2002

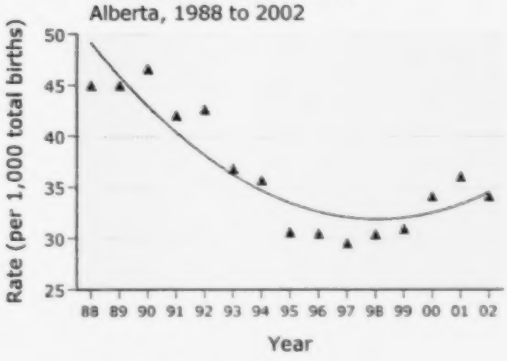
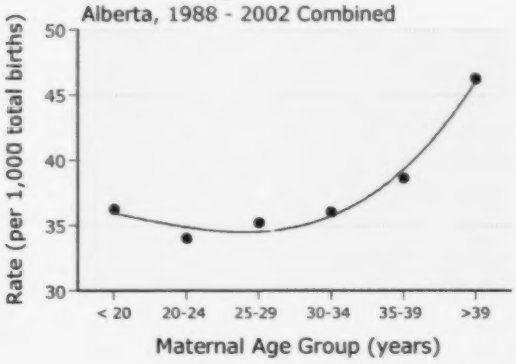


Figure 39

Congenital Anomalies Rate by Maternal Age Group, Alberta, 1988 - 2002 Combined



Respiratory distress syndrome resulted in the admission of 2.1% of newborns to hospital for 2001 and 2002 combined (1,574 cases total, 523 in 2001 and 1,051 in 2002).

Table A59 shows the prevalence of selected **congenital anomalies** from 1988 to 2008.

- The rate of **all congenital anomalies combined** decreased before 1995, remained stable until 1999, and increased in 2000, stabilizing from 2000 to 2002 (see Figure 38). The 2002 rate was 34.1 (per 1,000 total births).
- The **neural tube defect rate** did not follow a time trend between 1988 and 2002. The 2002 rate was 0.57 (per 1,000 total births).
- The **heart septal defect rate** decreased through the early 1990's and remained fairly stable from 1994 to 2000, before increasing in 2001 and 2002. The 2002 rate was 6.32 (per 1,000 total births).
- The **Down Syndrome rate** increased overall between 1988 and 2002, but inspection of the rates shows relative stability between 1988 and 1996, followed by increases in 1997 and 1998, and stability from 1999 to 2002. The 2002 rate was 1.72 (per 1,000 total births).
- The incidence of congenital anomalies varies with **maternal age** (see Table A60). The overall rate varies little until after age 39, when it increases (see Figure 39). For Down Syndrome, rate increases can be seen for mothers over 29 years of age. The recent trend of increased fertility for older mothers is worth noting in this context. Notably, however, neural tube defects are most likely in infants born to young mothers.
- Congenital anomalies rates also vary with **birth weight**: Anomalies increase in frequency with decreasing birth weight (see Table A61). Almost two out of every ten liveborn infants of less than 1,500 grams had congenital anomalies for 1988 to 2002 combined.

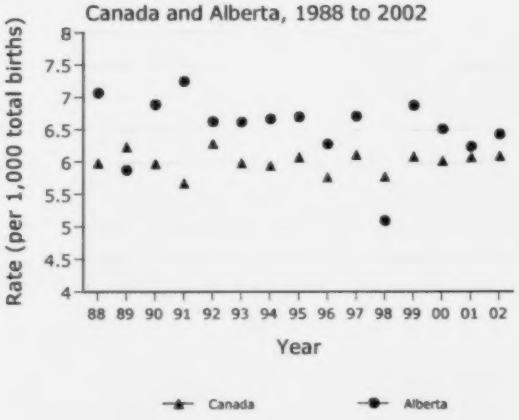
Mortality
Stillbirths
Introduction

Stillbirth is often associated with intrauterine growth restriction.

The stillbirth rate has not changed with time in Alberta.

Figure 40

Stillbirth Rates,
Canada and Alberta, 1988 to 2002



Definitions

Stillbirths refer to births with "the complete expulsion or the extraction from the mother after at least 20 weeks pregnancy, or after attaining a weight of 500 grams or more, of a fetus in which, after the expulsion or the extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord or unmistakable movement of voluntary muscle" (Alberta Vital Statistics Act, RHA 1980,cV-4 s1). Note that definitions of stillbirth differ between jurisdictions, making inter-jurisdictional comparisons difficult.

See Appendix 1 for comparative mortality definitions.

Stillbirth rate: Number of stillbirths per 1,000 total births in a given year (total births is the sum of live births and stillbirths).

Background

Risk factors for stillbirth include low maternal education, smoking during pregnancy, gender (stillbirths are more often male than female), preterm gestation, and low birth weight (Chen et al., 1998; Tough et al., 1999). The odds of stillbirth are particularly high for small-for-gestational-age infants, who may have intrauterine growth restriction. Mothers who previously gave birth to a small-for-gestational-age preterm infant have a greatly increased risk of stillbirth (Gardosi, Mul, Mongelli, and Fagan, 1998; Surkan, Stephansson, Dickman and Cnattingius, 2004).

Causes of stillbirth generally fall into the following categories, although a substantial proportion of stillbirths are unexplained: placental pathology (e.g., abruption), fetal pathology (e.g., intrauterine growth restriction, congenital anomalies), maternal disorders (e.g., diabetes, infection) and complications of labour and delivery (e.g., cord problems) (Huang, Usher, Kramer, Yang, Morin, and Fretts, 2000; Zhang and Klebanoff, 2004).

The Canadian stillbirth rate for 2002 was 6.1, compared with the Alberta rate of 6.4 (Statistics Canada, 2004c). As Figure 40 shows, there are no time trends in this rate for Canada or Alberta.

Data Sources

- **Stillbirths**: Vital Statistics Stillbirth Registration files, Department of Government Services, January 2004 Release, and Alberta Medical Association Reproductive Care Committee.
- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release, Vital Statistics Annual Reviews, 1999 and 2000.

Mortality
Stillbirths
Provincial Trends and Effects

Figure 41

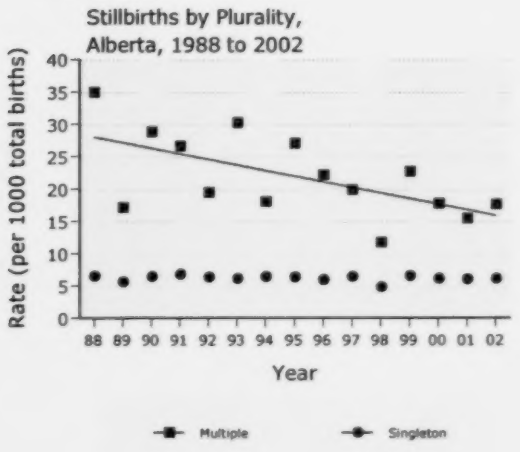


Figure 42

There were 249 stillbirths in Alberta in 2002, resulting in a **stillbirth rate** of 6.5 (per 1,000 total births; see Table A1).

The 2002 stillbirth rate for **multiple births** was 17.6; this was almost three times the rate for **singleton births**, which was 6.1 (see Table A62). As shown in Figure 41, there is no time trend for singleton stillbirths, but the multiple stillbirth rate declined significantly between 1988 and 2002. *These rates must be interpreted with caution due to the low numbers of multiple stillbirths.*

Stillbirths are most common prior to term. Between 1988 and 2002, 73.7% of stillbirths were **preterm** (see Table A63).

Maternal age is significantly associated with the stillbirth rate (see Table A64). Teenage mothers and mothers 35 years old and older are most likely to have stillbirths (see Figure 42).

Stillbirths and stillbirth rates by **birth weight** category appear in Table A65. For 1988 to 2002 combined, half of all stillbirths (49.4%) were of extremely low birth weight (<1,000 grams) and three quarters (74.0%) were low birth weight. (<2,500 grams). Just 23.9% of stillbirths were of "normal" birth weight (between 2500 and 3,999 grams), and 2.1% of stillbirths were of high birth weight (≥4,000 grams).

Tables A66a and A66b provide counts of 2001 and 2002 stillbirths by weight category, time of death (antepartum or intrapartum) and place of death (in hospital or prior to admission). About two-thirds of stillbirths were antepartum, with 95% of these occurring prior to hospital admission.

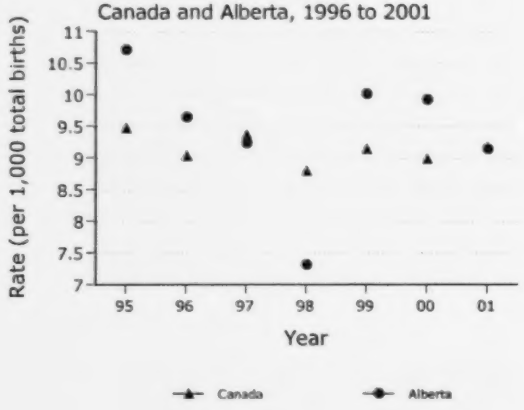
Tables A67a and A67b provide data on major anomalies as causes of death for stillbirths for 2001 and 2002. Data for 1998 to 2002 combined are in Table A68.

Mortality
Perinatal Mortality
Introduction

Perinatal mortality includes stillbirths and infant deaths prior to seven days of age. The number of perinatal losses is greater than the total number of infant deaths.

Figure 43

Perinatal Mortality Rates, Canada and Alberta, 1996 to 2001



Definitions

Perinatal deaths include stillbirths and early neonatal deaths (deaths before seven days of age). A fetal death is registered as a stillbirth in Alberta if delivery occurs at or after 20 weeks of pregnancy or if the fetal weight is 500 grams or greater and gestational age is not known.

Perinatal mortality rate: Number of perinatal deaths per 1,000 total births in a given year (total births is equal to the sum of live births and stillbirths).

See Appendix 1 for comparative mortality definitions.

Background

Comparisons of birth weight-specific perinatal mortality rates must be made with caution. A recent study of Canadian births showed that birth weight information was most likely to be missing for fetal deaths, and least likely to be missing in infants surviving to at least one year of age, with intermediate rates for neonatal deaths and post-neonatal deaths. Thus, bias occurs in calculating weight-specific mortality rates (Wen, Chen, Li, Kramer, & Allen, 2002).

The 2001 perinatal mortality rate was 9.2 in Canada and 9.1 in Alberta. (Statistics Canada, 2003a, 2003b). There were no linear trends for either Canada or Alberta (Figure 43).

Data Sources

- **Stillbirths**: Vital Statistics Stillbirth Registration files, Department of Government Services, January 2004 Release, Alberta Medical Association Reproductive Care Committee.
- **Neonatal mortalities**: Vital Statistics Death Registration files, Department of Government Services, May 2001 Release, and Alberta Medical Association Reproductive Care Committee.
- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release, and Vital Statistics Annual Reviews, 1999 and 2000.
- The mortality data include non-resident mothers who delivered in Alberta, but do not include babies born out-of-province who died in Alberta hospitals.

Mortality
Perinatal Mortality
Provincial Trends and Effects

Figure 44

Perinatal and Neonatal Mortality Rates by Birth Weight Category, Alberta, 1998 to 2002 Combined

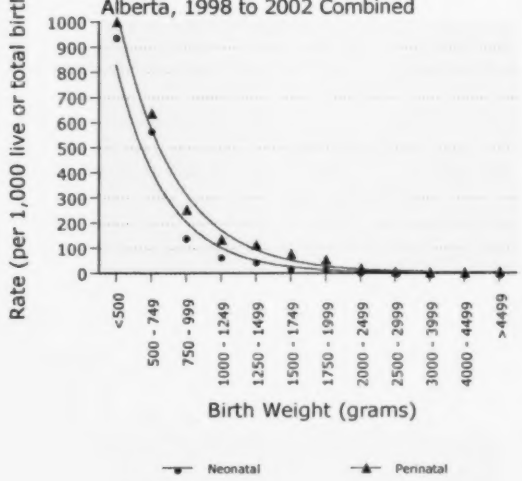


Figure 45

Perinatal and Neonatal Mortality Rates by Gestational Age, Alberta, 1998 to 2002 Combined

Perinatal mortality rates reported below *must be interpreted with caution* due to the low number of cases in many categories.

The **perinatal mortality rate** for 2002 was 10.6 (per 1,000 total births; see Table A1).

Perinatal mortality rates by **birth weight** are provided for 2001 and 2002 (Tables A69 and A70) and for 1998 to 2002 combined (Table A71, Figure 44). Perinatal mortality begins to level off once birth weight reaches 1,000 grams, and by 2,500 grams the rates are quite low.

Perinatal mortality rates by **gestational age** for 2001 and 2002 are in Tables A72 and A73. Rates for 1998 to 2002 combined are in Table A74. Perinatal mortality rates improve at 33 weeks gestation, but do not reach low levels until 37 or 38 weeks gestation (see Figure 45).

Perinatal mortality rates by **maternal age** for 2001 and 2002 appear in Tables A75a and A75b. Perinatal mortality rates were lowest for mothers aged 18 to 29 (10.5 per 1,000 total births) and highest for mothers 40 and older (21.4) in 2002.

Details on congenital anomalies as causes of perinatal deaths for 2000 and 2001 are in Tables A67a and A67b; Table A68 has congenital anomalies data for 1998 to 2002 for stillbirths and neonatal deaths. Chromosomal anomalies were the most common cause of perinatal death due to congenital anomaly (36.8% of congenital anomaly deaths in 2002).

For causes of antepartum deaths of babies weighing 2,500 grams or more from 1999 to 2002, refer to Table A76.

- The most common causes for 1999 to 2002 combined were intrauterine asphyxia (45.5%), nuchal cord/true knot or cord occlusion (27.7%), abruptio placenta/placenta previa (12.9%), and placental insufficiency (7.6%).

A summary of the Wigglesworth classification of causes of perinatal and neonatal deaths appears in Appendix 4 (see Tables A77 through A83).

Mortality
Perinatal Mortality
Regional Trends and Effects

Perinatal statistics by **facility RHA** for 2001 and 2002 are provided in Tables A84 and A85.

Detailed information on perinatal deaths by facility RHA for 2001 and 2002 appears in Tables A86 and A87. The perinatal mortality rate for 2002 for birth weights 500 grams and over was 6.9; the rate for birth weights 1,000 grams and over was 4.2. These rates were 5.0 and 3.0, respectively, when corrected for congenital anomalies. The number of cases is too small to make inter-regional comparisons.

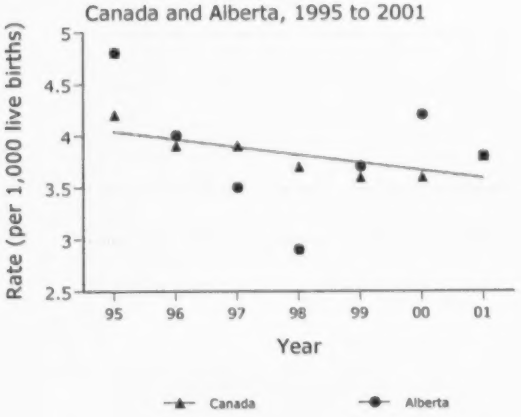
Perinatal statistics by **level of hospital** for 2001 and 2002 are provided in Tables A88 and A89 (see Health Canada 2000 for definition of levels of hospitals). Rates were generally highest in Level III and lowest in Level I hospitals.

Mortality
Neonatal Mortality
Introduction

Neonatal mortality occurs before four weeks of age. More than half of neonatal deaths are due to immaturity or congenital anomalies.

Figure 46

Neonatal Mortality Rates, Canada and Alberta, 1995 to 2001



Definitions

A **neonatal death** occurs when an infant is born alive but dies before 28 days of age.

Neonatal mortality rate: Number of neonatal deaths per 1,000 live births in a given year.

See Appendix 1 for comparative mortality definitions.

Background

The leading **causes** of neonatal death in Canada in 1999 were immaturity (32.6% of neonatal deaths), congenital anomalies (28.5%), and asphyxia (14.7%) (Health Canada, 2003).

The neonatal mortality rate was 3.8 in both Canada and Alberta in 2001 (Statistics Canada, 2003b). The Canadian rate declined significantly between 1995 and 2001. There was no significant trend in the Alberta data (see Figure 46).

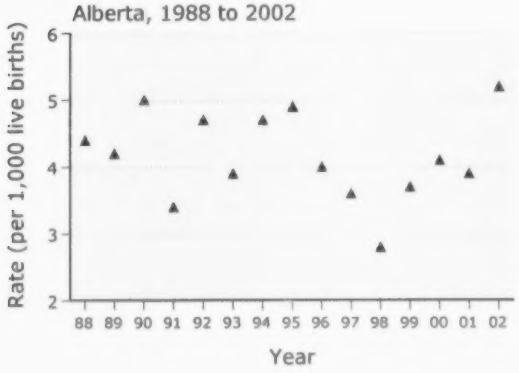
Data Sources

- **Neonatal mortalities**: Vital Statistics Death Registration files, Department of Government Services, May 2001 Release, and Alberta Medical Association Reproductive Care Committee.
- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release, and Vital Statistics Annual Reviews, 1999 and 2000.
- The mortality data include non-resident mothers who delivered in Alberta, but do not include babies born out-of-province who died in Alberta hospitals.

Mortality
Neonatal Mortality
Provincial Trends and Effects

Figure 47

Neonatal Mortality Rate, Alberta, 1988 to 2002



Neonatal mortality rates reported below *must be interpreted with caution* due to the low number of cases in many categories.

The **neonatal mortality rate** (per 1,000 live births) was 5.2 in 2002, which is the highest rate between 1988 and 2002 (see Tables A1 and A90). The rate shows no significant time trend (Figure 47).

Neonatal mortality rates decrease with increasing **birth weight**; rates are provided for 2001 and 2002 (Tables A69 and A70) and for 1998 to 2002 combined (Table A71 and Figure 44). Rates begin to level off at 1,000 grams, and by 2,500 grams the rates are low.

Neonatal mortality also decreases with increasing **gestational age**. Rates for 2001 and 2002 are in Tables A72 and A73 and rates for 1998 to 2002 combined are in Table A74 and Figure 45.. Neonatal mortality rates begin to settle out at around 28 weeks gestation, but do not reach low levels until about 38 weeks gestation.

Neonatal mortality rates by **maternal age** for 2001 and 2002 are shown in Tables A75a and A75b. Neonatal mortality rates were lowest for mothers aged 30 to 39 years (4.5 per 1,000 live births) in 2002 , and highest for mothers aged 40 years and over (8.5).

Neonatal mortality rate is strongly predicted by low birth weight, prematurity, and congenital anomalies (see Tables A71 and A74). For 1998 to 2002, 70.3% of neonatal deaths were low birth weight, 76.2% were preterm, and 39.5% had congenital anomalies.

- Details on congenital anomalies as causes of neonatal deaths for 2001 and 2002 are in Table A67a and A67b; Table A68 has congenital anomalies data for 1998 to 2002. For 1998 to 2002 combined, 25.5% of neonatal deaths due to congenital anomalies involved chromosomal anomalies, and 24.1% were due to cardio-respiratory anomalies.

Causes of death for intrapartum and neonatal deaths of babies who weighed 2500 grams or greater for 1999 to 2002 are in Table A91.

- In each of these cases the fetus was considered to be alive at the start of labour, prior to and during induction of labour and/or cesarean section.
- In 29.9% of cases for 1999 to 2002 combined, the cause of death was intrauterine asphyxia of unknown cause, and intrapartum hemorrhage was the cause in 20.6% of cases.

A summary of the Wigglesworth classification of causes of perinatal and neonatal deaths appears in Appendix 4 (see Tables A77 through A83).

Mortality
Neonatal Mortality
Regional Trends and Effects

Neonatal statistics by **facility RHA** for 2001 and 2002 appear in Tables A84 and A85.

Tables A92 and A93 provide detailed information on neonatal deaths for facility RHAs for 2001 and 2002. The neonatal mortality rate in 2002 for infants weighing 500 grams or more at birth was 3.6 (per 1,000 live births); the rate for infants with birth weights of at least 1000 grams was 1.9. When corrected for congenital anomalies, the rates were 2.1 and 0.7, respectively. The number of cases is too small to make inter-regional comparisons.

Neonatal statistics by **level of hospital** for 2001 and 2002 are in Tables A88 and A89. Rates were generally highest in Level III hospitals (see Health Canada 2000 for definition of levels of hospitals).

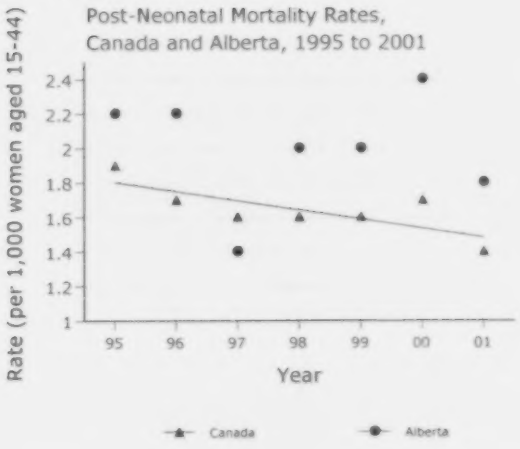
Neonatal mortality rates by **residence and facility RHA** for 2000 to 2002 combined are in Table A94. The number of cases is too small to make inter-regional comparisons.

Mortality
Post-Neonatal Mortality
Introduction

Post-neonatal deaths occur when an infant dies between 28 days and one year of age. Sudden infant death syndrome and congenital anomalies are the primary causes of post-neonatal deaths.

Figure 48

Post-Neonatal Mortality Rates, Canada and Alberta, 1995 to 2001



Definitions

A **post-neonatal death** occurs when an infant is born alive but dies between 28 days and one year of age.

Post-neonatal mortality rate: Number of post-neonatal deaths per 1,000 live births in a given year.

See Appendix 1 for comparative mortality definitions.

Sudden infant death syndrome (SIDS): The sudden and unexpected death of an apparently healthy infant under one year of age which remains unexplained after all known and possible causes have been ruled out through autopsy, death scene investigation and review of the medical history (Health Canada, 2002c).

Background

Data for Canada for 1999 indicate that the leading **causes** of post-neonatal death were sudden infant death syndrome (29.2% of post-neonatal deaths), congenital anomalies (22.6%), and infection (12.5%) (Health Canada, 2003).

Risk factors for SIDS include prone sleeping position, prenatal smoking, infant exposure to tobacco smoke, young maternal age, preterm birth, male sex, low birth weight, and increasing parity (Rusen, Liu, Sauve, Joseph, & Kramer, 2004).

Sudden infant death syndrome rates are elevated among First Nations populations. In a study of American Indians, SIDS was more common among women who engaged in binge drinking during pregnancy. It also occurred more often in infants wearing two or more layers of clothing, and less often when a visit from a public health nurse had occurred (Iyasu et al., 2002)

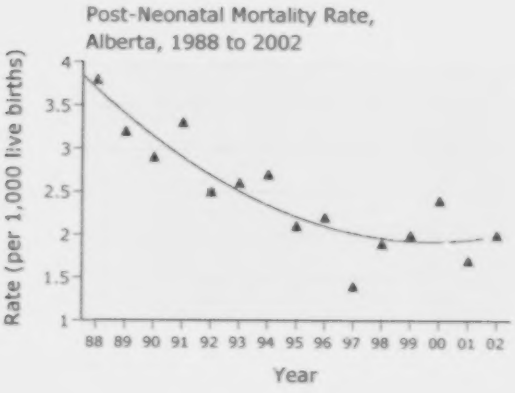
For 2001, the post-neonatal mortality rate was 1.4 in Canada and 1.8 in Alberta (Statistics Canada, 2003b). The national rate declined between 1995 and 2001, while the provincial rate showed no time trend (see Figure 48).

Data Sources

- **Mortalities**: Vital Statistics Death Registration files, Department of Government Services, May 2001 Release.
- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.

Mortality
Post-Neonatal Mortality
Provincial Trends and Effects

Figure 49



Post-neonatal mortality rates reported below *must be interpreted with caution* due to the low number of cases in many categories

The **post-neonatal mortality rate** (per 1,000 live births) was 2.0 in 2002. The rate declined between 1988 and 1997 and has since stabilized somewhat (see Figure 49 and Tables A1 and A90).

Mortality
Post-Neonatal Mortality
Regional Trends and Effects

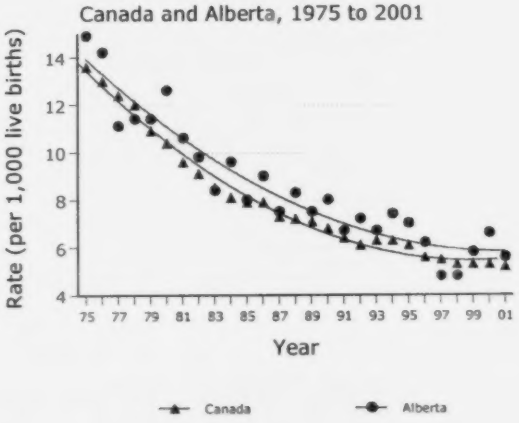
Post-neonatal mortality rates by **residence and facility RHA** for 2000 to 2002 combined are in Table A94. The number of cases is too small to make inter-regional comparisons.

Mortality
Infant Mortality
Introduction

Infant deaths occur between live birth and one year of age. After many years of decline, infant mortality has leveled off in Alberta and Canada over the last several years.

Figure 50

Infant Mortality Rates,
Canada and Alberta, 1975 to 2001



Definitions

An **infant mortality** occurs when an infant dies before reaching 12 months of age. This includes neonatal and post-neonatal deaths.
Infant mortality rate: Number of infant deaths per 1,000 live births.

See Appendix 1 for comparative mortality definitions.

Background

Prematurity and low birth weight are the two strongest **predictors** of infant mortality. Infant deaths are also more likely to occur with maternal smoking, low maternal education, low or high maternal age, and infants of male gender (Chen et al., 1998; Nault, 1997; Pollack, Lantz, and Frohna, 2000).

The leading **causes** of infant mortality in Canada in 1999 were congenital anomalies (26.5%), immaturity (23.4%), sudden infant death syndrome (11.2%), and asphyxia (10.1%) (Health Canada, 2003). Increasing prenatal diagnosis and pregnancy termination have resulted in decreasing infant deaths from congenital anomalies (Liu, Joseph, Kramer, Allen, Sauve, Rusen, & Wen, 2002).

Infant mortality rates in Canada have declined substantially over the last few decades, with decreases in deaths due to perinatal conditions, congenital anomalies, and external causes. Contrary to international trends, regional and socioeconomic disparities in infant death rates have also diminished (Wilkins & Houle, 1999; Dzakpasu, Joseph, Kramer, & Allen, 2000; but see Wen, Kramer, Liu, Dzakpasu, and Sauve, 2000).

In 2001, there were 5.2 infant deaths for every 1,000 live births in Canada, compared with 5.6 in Alberta (Statistics Canada, 2003b). Figure 50 provides historical data on infant deaths in Canada and Alberta from 1975 to 2001, demonstrating decades of steady decline followed by recent leveling-off of the infant mortality rate, at the national level as well as the provincial level. The recent leveling-off of the infant mortality rate has been attributed to increasing registration of live births of less than 500 grams (Liu, Joseph, Kramer, et al., 2002).

Data Sources

- **Mortalities**: Vital Statistics Death Registration files, Department of Government Services, May 2001 Release.
- **Live births**: Vital Statistics Birth Registration files, Department of Government Services, January 2004 Release.

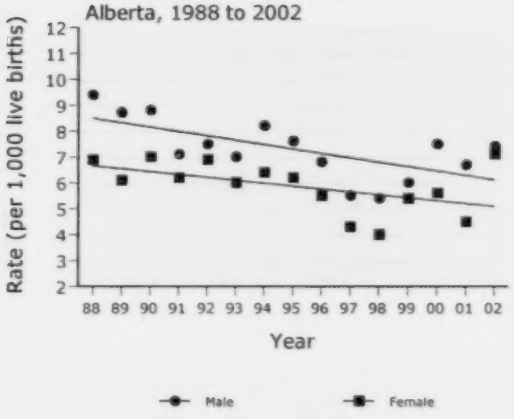
Mortality
Infant Mortality
Provincial Trends and Effects

The **infant mortality rate** (per 1,000 live births) decreased from 1988 to 1998, and appears to have stabilized from 2000 on (see Tables A1 and A90). The 2002 rate was 7.2, however, which is the highest rate since 1994.

Infant mortality rates by **gender** from 1988 to 2002 are shown in Table A95. The rate for females was lower than for males every year (see Figure 51). In 2002, the infant mortality rate for females reached its highest point since 1988, at 7.1. The male rate for 2002 was 7.4.

Figure 51

Infant Mortality Rate by Gender, Alberta, 1988 to 2002

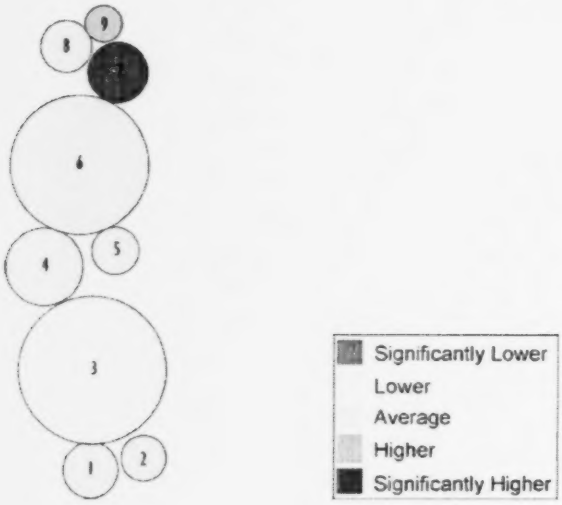


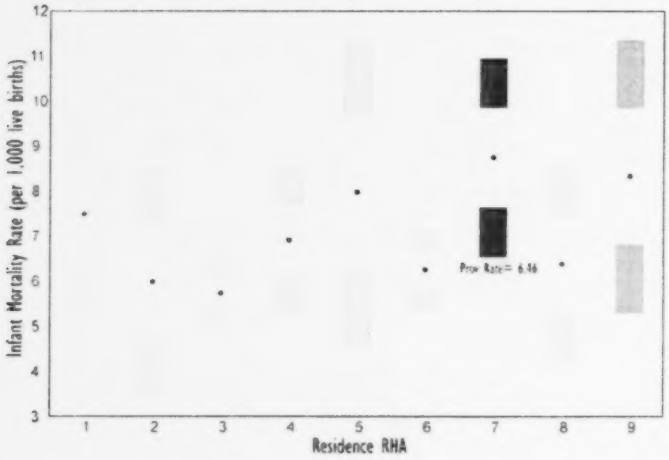
Mortality
Infant Mortality
Regional Trends and Effects

Infant mortalities for **residence and facility RHAs** appear in Table A96. Rates are not provided due to the low number of cases in many cells.

Combined data for 2000 to 2002 by residence RHA are in Table A94. The infant mortality rate was significantly higher than the provincial mean in RHA 7 (see Map 11 and Appendix 3). None of the other regional rates varied significantly from the provincial mean.

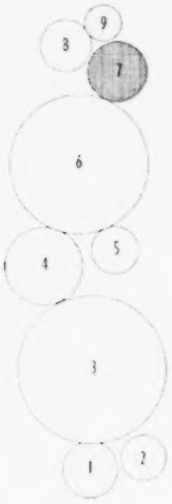
Map 11. Infant Mortality Rate (per 1,000 live births) by Residence RHA, Alberta, 2000 – 2002 Combined

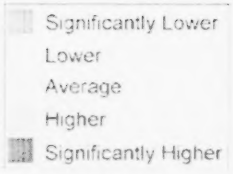


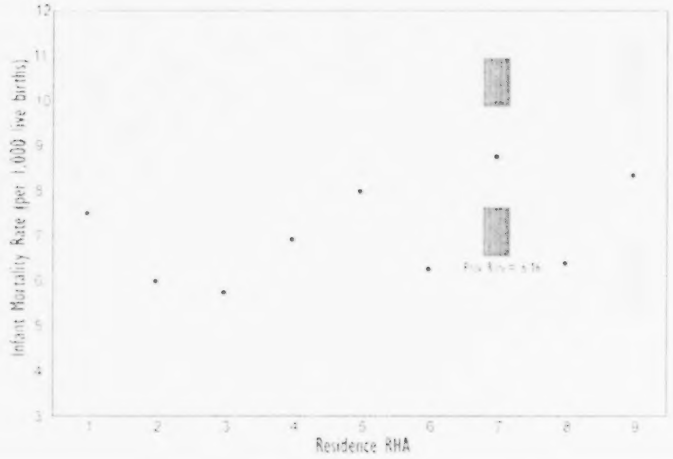


Mortality
Infant Mortality
Regional Trends and Effects

Map 11. Infant Mortality Rate (per 1,000 live births) by Residence RHA, Alberta, 2000 – 2002 Combined







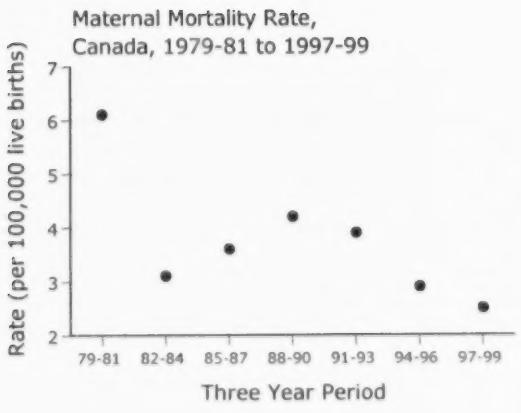
Infant mortalities for **residence and facility RHAs** appear in Table A96. Rates are not provided due to the low number of cases in many cells.

Combined data for 2000 to 2002 by residence RHA are in Table A94. The infant mortality rate was significantly higher than the provincial mean in RHA 7 (see Map 11 and Appendix 3). None of the other regional rates varied significantly from the provincial mean.

Mortality
Maternal Mortality
Introduction

Maternal mortalities can be direct obstetric deaths, indirect obstetric deaths, or unrelated deaths, occurring during pregnancy or up to 90 days afterward. There are very few direct obstetric deaths in Alberta each year.

Figure 52



Definitions

The Alberta Medical Association Reproductive Care Committee reviews reported maternal deaths that occur during pregnancy and up to 90 days post-delivery. These deaths are classified according to the Council on Medical Service, American Medical Association, Committee on Maternal And Child Care, A Guide for Maternal Death Studies (1964). This classification includes three categories:

Direct obstetric deaths: Maternal deaths resulting from complications of pregnancy, childbirth or puerperium including intervention, omission, incorrect treatment, or from chain of events resulting from above.

Indirect obstetric deaths: Maternal deaths resulting from previous existing diseases or diseases that developed during pregnancy, childbirth or the puerperium which are not due to a direct obstetric cause.

Unrelated deaths: Maternal deaths not related to pregnancy, childbirth or puerperium, but occurring within the defined time frame.

Maternal mortality rate: Number of maternal deaths per 10,000 live births in a given year.

Background

The risk of maternal death is higher for **older mothers**, in particular mothers over 40 years of age, regardless of parity, prenatal care, or education. Causes of death associated with increased maternal age include abnormalities of placentation and hypertensive disorders (Callaghan & Berg, 2003).

Deaths due to diseases of the arteries, arterioles, and capillaries are more common in pregnant women than in age-matched women, while deaths due to injury are less common in pregnant women (Turner, Kramer, & Liu, 2002).

The maternal mortality rate is low in Canada and has stabilized over the last two or three decades (Hoyert, Danel, & Tully, 2000). Maternal deaths are underreported, and recent changes in coding systems for deaths alter the patterns of reporting (Turner, Cyr, Kinch, Liston, Kramer, Fair and Heaman, 2002).

Between 1997 and 1999, there were 2.5 maternal deaths per 100,000 live births in Canada (Health Canada, 2003). There is no time trend in the data for 1979-1981 through 1997-1999 (see Figure 52). The most common causes of direct maternal death in Canada are pulmonary embolism, hypertension, and postpartum hemorrhage (Health Canada, 2003).

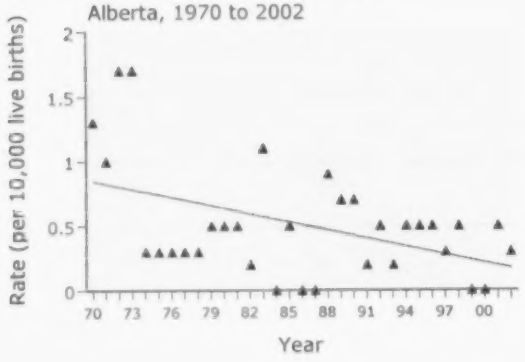
Data Sources

- **Maternal mortality data**: Alberta Medical Association Reproductive Care Committee.
- **Live births**: Vital Statistics Annual Reviews, 1999 and 2000.

Mortality
Maternal Mortality
Provincial Trends and Effects

Figure 53

Direct Maternal Mortality Rate, Alberta, 1970 to 2002



Maternal mortality rates in Alberta are minimal. Direct and maternal mortality rates followed significant linear decreasing trends from 1970 to 2002 (see Figure 53), as did unrelated maternal deaths. Indirect deaths did not vary significantly with time (see Table A97).

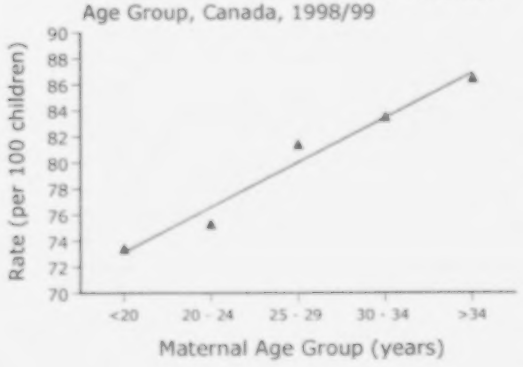
Since 1991, rates have remained relatively stable, between 0.2 and 0.5 per 10,000 live births. In 2002, six maternal deaths were reported in Alberta (one direct, and five unrelated).

Maternal Factors
Maternal Postnatal Behaviours
Introduction

The World Health Organization advocates exclusive breastfeeding for the first six months of age. The benefits of breastfeeding are multifold for both mother and child. While breastfeeding initiation rates are high in Alberta and Canada, early cessation is common.

Figure 54

Breastfeeding Initiation Rate by Maternal Age Group, Canada, 1998/99



Definitions

Breastfeeding women included those documented as breastfeeding on discharge from hospital after giving birth.

Breastfeeding initiation rate: Number of women per 100 hospital deliveries who were breastfeeding when discharged.

Background

The **World Health Organization recommends** exclusive breastfeeding up to six months of age, and continuation of supplemented breastfeeding up to two years of age and beyond (World Health Organization, 2001; World Health Organization/UNICEF, 1990).

Benefits of breastfeeding for infants include protection from gastrointestinal and respiratory infections and otitis media, as well as enhanced cognitive development. For mothers, benefits include reduced postpartum bleeding, earlier postpartum weight loss, delayed resumption of ovulation, increased postpartum bone remineralization, and reduced risk of ovarian and breast cancer (Health Canada, 2003).

Mothers at **risk for early cessation** of breastfeeding include first-time mothers, mothers with low levels of education, smokers, those exposed to material promoting formula feeding, and mothers who are ill in the postpartum period (Howard, Howard, Lawrence, Andresen, DeBlieck, & Weitzman, 2000; Ratner, Johnson, & Bottorff, 1999). Programs designed to increase knowledge about breastfeeding can lead to increased duration of breastfeeding (Susin, Giugliani, Kummer, Maciel, Simon, & da Silveira, 1999).

Early introduction of solid foods has been associated with the development of allergies, iron deficiency, and hypernatremic dehydration (Kwavnick, Reid, Joffres, & Guernsey, 1999).

In Canada in 1998/1999, the breastfeeding initiation rate was 81.9 (per 100 children) and the rate for duration of breastfeeding of three months or more was 63.0. The rate of breastfeeding initiation increased with increasing maternal age (see Figure 54). There was an east-to-west gradient of breastfeeding initiation, with lowest rates in the Maritimes (64.5) and highest rates in the western provinces (95.2 in British Columbia) (Health Canada, 2003).

Data Sources

- **Breastfeeding initiation data**: Alberta Medical Association Reproductive Care Committee.

Maternal Factors
Maternal Postnatal Behaviours
Provincial Trends and Effects

Breastfeeding initiation rates for 1996 to 2002 appear in Table A98. The rate of breastfeeding initiation increased slightly from 1996 to 2000, but did not change between 2000 and 2002 (see Figure 55).

In 2002, 86.2% of women were breastfeeding upon discharge from hospital after giving birth, up from 83.1% in 1996.

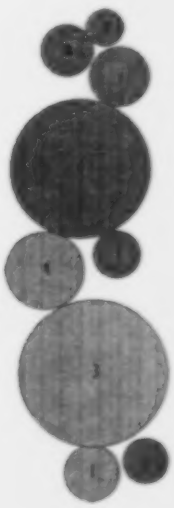
Figure 55

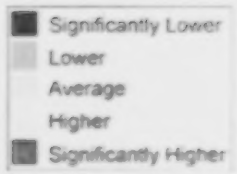
Maternal Factors
Maternal Postnatal Behaviours
Regional Trends and Effects

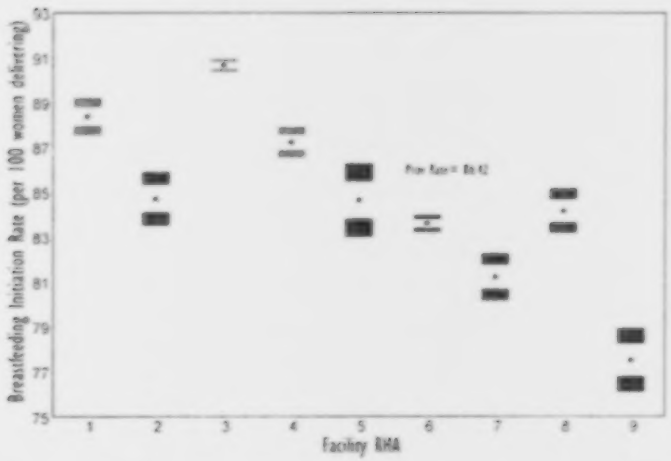
Table A99 shows **breastfeeding upon discharge** by **facility RHA** from 1999 to 2002.

- Breastfeeding initiation rates for 2000 to 2002 combined were higher than the provincial mean for women delivering in RHAs 1, 3 and 4, and lower than the provincial mean in the remaining RHAs (see Map 12 and Appendix 3).

Map 12. Breastfeeding Initiation Rate (per 100 hospital deliveries) by Facility RHA, Alberta, 2000 – 2002 Combined



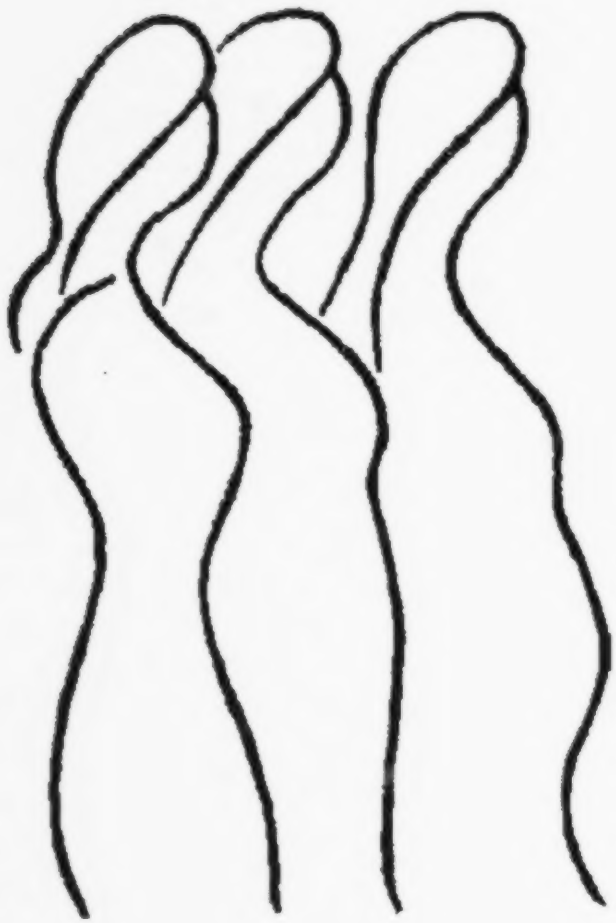




Maternal Factors
Maternal Postnatal Behaviours
Regional Trends and Effects

Map 12. Breastfeeding Initiation Rate (per 100 hospital deliveries) by Facility RHA, Alberta, 2000 – 2002 Combined

References



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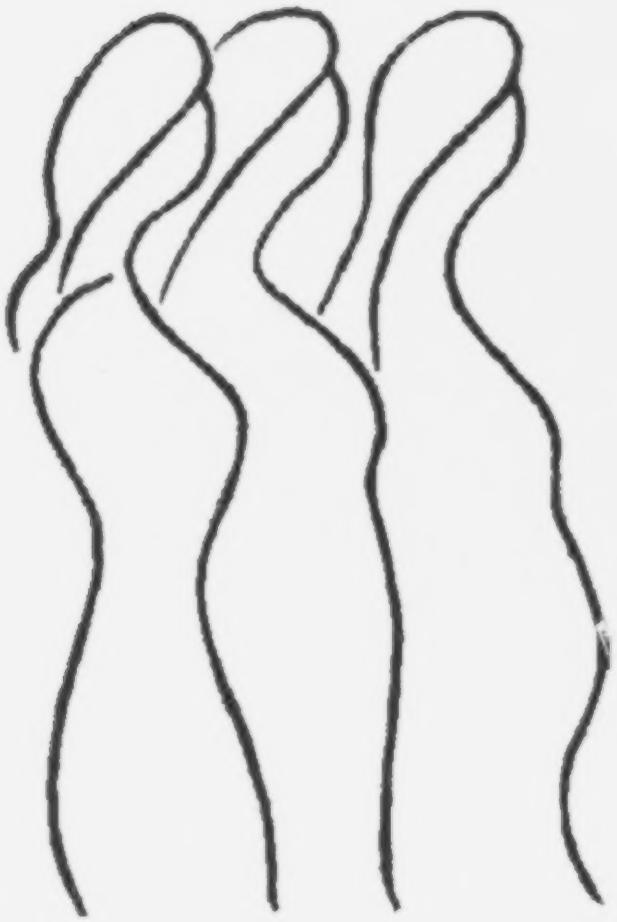
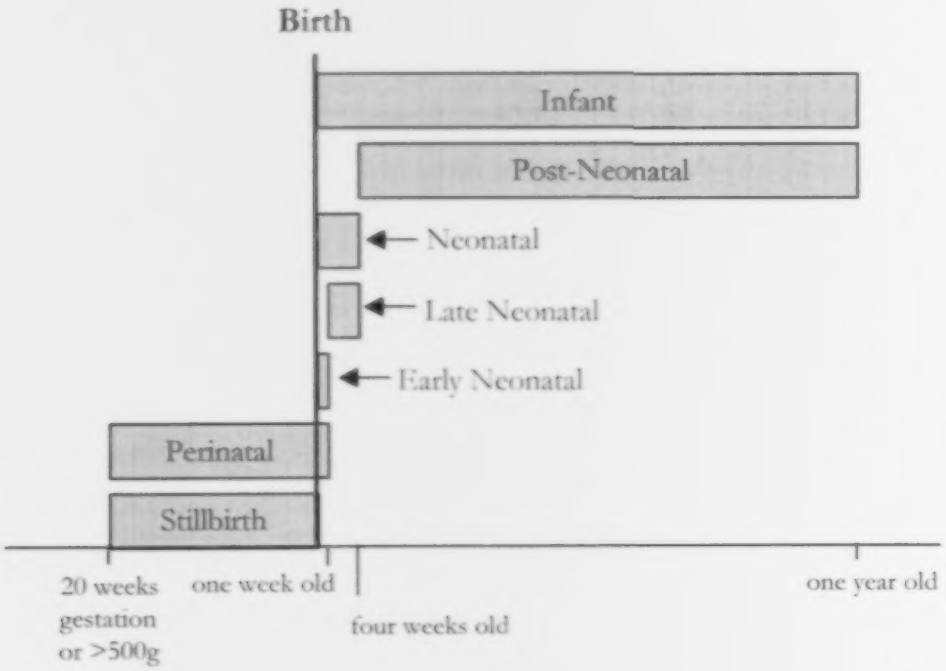
Appendices



Appendix 1: Mortality Definitions



Type of Death	Definition
Infant	Death prior to one year of age
Post-Neonatal	Death at four weeks of age or later, prior to one year of age
Neonatal	Death prior to four full weeks of age
Late Neonatal	Death at one week of age or later, prior to four weeks of age
Early Neonatal	Death prior to one full week of age
Perinatal	Stillbirth or early neonatal death
Stillbirth	Death prior to birth, at 20 weeks gestation or later or weighing 500g or more

Appendix 2: Codes Used for Data Extraction

From: International Classification of Disease – 9th Revision – Clinical Modification (ICD-9-CM) Codes , and International Statistical Classification of Diseases and Related Health Problems Tenth Revision, Canada (ICD-10-CA) 2003, and Canadian Classification of Health Interventions (CCI) 2003.

Induced Abortion

1988 to 2001

Fee-For-Service Claims health service codes: 86.41, 87.0, 87.0A, 87.1, 87.21

2002

Diagnostic Code

ICD-10-CA: O04^^	Medical abortion

Intervention Codes

CCI: 5CA88.^^	Medical termination
CCI: 5CA89GA	Surgical aspiration and curettage
CCI: 5CA89GC	Surgical dilatation and curettage

Spontaneous abortion

1988 to 2002

Diagnostic code

ICD-9-CM: 634	Spontaneous abortion

Hospital Delivery

1988 to 2001

Diagnostic Codes

ICD-9-CM: 640-648	Complications mainly related to pregnancy	
Fifth digit:	1	Delivered, with or without mention of antepartum condition
	2	Delivered, with mention of postpartum complication
ICD-9-CM: 650	Delivery in a completely normal case	
ICD-9-CM: 651-659	Other indications for care in pregnancy, labour and delivery	
Fifth digit:	1	Delivered, with or without mention of antepartum condition
	2	Delivered, with mention of postpartum complication

V Code

ICD-9-CM: V27	Outcome of delivery

2002

Diagnostic Codes

ICD-10-CA: O10^^ to O99^^ with a last digit of 1 or 2	Pregnancy, childbirth and the puerperium, (excluding pregnancy with abortive outcome)
or Z37^^	Outcome of delivery

Intervention Codes

CCI: 5MD50^^ to 5MD60^^	Manually assisted vaginal delivery (vertex), Unassisted spontaneous vaginal delivery, Water birth, Forceps traction and rotation delivery, Vacuum traction delivery, Combination of vacuum and forceps delivery, Breech delivery, Cesarean section delivery.

Induction of labour

1988 to 2001

Procedure Codes

ICD-9-CM: 73.4	Medical induction of labour
ICD-9-CM: 73.01	Induction of labour by artificial rupture of membranes
ICD-9-CM: 73.1	Other surgical induction of labour

2002

Procedure Codes

ICD-10-CA: 5AC30AL, 5AC30AZ, 5AC30CA, 5AC30GU, 5AC30HA, 5AC30YB, 5AC30ZZ
Medical Induction

ICD-10-CA: 5AC30AN, 5AC30AP, 5AC30CK
Surgical Induction

ICD-10-CA: 5AC30AL, 5AC30AZ, 5AC30CA, 5AC30GU, 5AC30HA, 5AC30Y8, 5AC30ZZ, 5AC30AN, 5AC30AP, 5AC30CK Combined Induction

If a delivery was counted in "Combined Induction", it was not counted in "Medical Induction" or "Surgical Induction" (i.e., these three categories are mutually exclusive).

Operative Delivery

1988 to 2001

Procedure Codes

ICD-9-CM: 74	Cesarean section and removal of fetus (74.91 (hysterotomy to terminate pregnancy) was excluded).
ICD-9-CM: 72.0	Low forceps operation
ICD-9-CM: 72.1	Low forceps operation with episiotomy
ICD-9-CM: 72.2	Mid forceps operation
ICD-9-CM: 72.21	Mid forceps with episiotomy
ICD-9-CM: 72.29	Other mid forceps operation
ICD-9-CM: 72.3	High forceps operation
ICD-9-CM: 72.31	High forceps operation with episiotomy
ICD-9-CM: 72.39	Other high forceps operation
ICD-9-CM: 72.7	Vacuum extraction
ICD-9-CM: 72.71	Vacuum extraction with episiotomy

2002

Intervention Codes

CCI: 5MD53.^^, 5MD55.^^, 5.MD.60.RG, 5.MD.60.JZ, 5.MD.60.KC, 5.MD.60.RA, 5.MD.60.RE, 5.MD.60.JW, 5.MD.60.RG , 5.MD.60.CB, 5.MD.60.CC, 5.MD.60.CD, 5.MD.60.CE, 5.MD.60.CF, 5.MD.60.CG
Forceps traction and rotation delivery

CCI: 5MD54.^^, 5MD55.^^, 5.MD.60.RD, 5.MD.60.KA, 5.MD.60.KD, 5.MD.60.RB, 5.MD.60.RF, 5.MD.60.JX, 5.MD.60.RH, 5.MD.60.CB, 5.MD.60.CC, 5.MD.60.CD, 5.MD.60.CE, 5.MD.60.CF, 5.MD.60.CG
Vacuum traction delivery

CCI: 5MD55.^^	Combination of vacuum and forceps delivery
CCI: 5MD56.^^	Breech delivery
CCI: 5MD60.^^	Cesarean section delivery

Respiratory distress syndrome

1988 to 2001

Diagnostic code

ICD-9- CM: 769	Respiratory distress syndrome

2002

Diagnostic codes

ICD-10-CA: P22.0	Respiratory distress syndrome of newborn (RDS)
ICD-10-CA: P22.8	Other respiratory distress of newborn
ICD-10-CA: P22.9	Respiratory distress of newborn, unspecified

Congenital Anomalies

1988 to 2002

Diagnostic Codes

ICD-9- CM: 740.0-742.0	Neural Tube Defects
ICD-9- CM: 745.0-745.9	Heart Septal Defect
ICD-9- CM: 758.0	Down Syndrome

For "All congenital anomalies combined" analyses, the following diagnostic codes were included:

Congenital Anomalies within ICD-9 740.0-759.9:

ICD-9- CM: 740.0-742.9	Nervous System Anomalies
ICD-9- CM: 743.0-743.9	Eye Anomalies
ICD-9- CM: 744.0-744.9	Ear, Face and Neck
ICD-9- CM: 745.0-747.9	Cardiovascular System Defect
ICD-9- CM: 748.0-748.9	Respiratory System Anomalies
ICD-9- CM: 749.0-751.9	Digestive System Anomalies
ICD-9- CM: 752.0-752.9	Genital Organ Anomalies
ICD-9- CM: 753.0-753.9	Urinary System Anomalies
ICD-9- CM: 754.0-756.9	Musculoskeletal Anomalies
ICD-9- CM: 757.0-757.9	Integument Anomalies
ICD-9- CM: 758.0-758.9	Chromosomal Anomalies
ICD-9- CM: 759.0-759.9	Other and Unspecified Anomalies

Congenital Anomalies/Disorders Outside ICD-9 740.0-759.9:

ICD-9- CM: 140-239	Neoplasm
ICD-9- CM: 243.9	Congenital Hypothyroidism
ICD-9- CM: 255.2	Adrenogenital Disorders
ICD-9- CM: 270	Amino Acid and Organic Acid Disorders
ICD-9- CM: 271	Disorders of CHO Transport and Metabolism
ICD-9- CM: 275	Disorders of Mineral Metabolism
ICD-9- CM: 277.00	Cystic Fibrosis
ICD-9- CM: 282	Hereditary Hemolytic Anemias
ICD-9- CM: 343 (including 342, 344)	Cerebral Palsy
ICD-9- CM: 348.0	Cerebral Cysts
ICD-9- CM: 760.76	Fetal Alcohol Syndrome

Appendix 3: Epidemiologic Measures for Maps

Dr. Donald Schopflocher and Erik Ellehoj

All health events reported in this document are mapped according to the method described below. This method was developed to address the issue of how population sizes of health regions can affect rate stability. Specifically, rates will be less stable for RHAs with large populations than those for RHAs with larger populations. The mapping method used in this report is designed to address this issue and allow statistically consistent interpretations. (As an example the numbers shown in the calculations in Steps 1, 2 and 3 below are for low birth weight babies born in the Chinook, Palliser and Northern Lights health regions and compared against provincial rates from 2000 to 2002).

The mapping method consists of the following seven steps:

1. Calculate the rates for each region. For crude rates, an example of this calculation is shown below. *Note: where sex- age standardized rates are used a more detailed calculation would be required.*

Health Region #	Low Birth Weight (LBW)	Total Live Births	Proportion LBW
1	331	5,874	0.056
2	213	3,677	0.058
.	.	.	.
.	.	.	.
.	.	.	.
9	175	3,602	0.049

2. Calculate the rate for the province. For crude rates, an example of this calculation is shown below. *Note: where sex- age standardized rates are used a more detailed calculation would be required.*

Number of low birth weight newborns: 6,999
Total number of live births: 112,133
Proportion low birth weight: 6,999 / 112,133 = 0.062

3. Calculate standard error of a probability of a health event for each regional rate. For crude rates the formula which follows can be used. *Note: where sex- age standardized rates are used a more detailed calculation would be required.*

$$\sqrt{\frac{p(1-p)}{n}}$$

Where: p is the proportion (estimate of probability) for the region
n is the number of births.

Health Region #	Low Birth Weight (LBW)	Total Live Births	Proportion LBW	Calculation	Standard Error
1	331	5,874	0.056	$\sqrt{\frac{0.056(1-0.056)}{5,874}}$	0.0030
2	213	3,677	0.058	$\sqrt{\frac{0.058(1-0.058)}{3,677}}$	0.0038
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
9	175	3,602	0.049	$\sqrt{\frac{0.049(1-0.049)}{3,602}}$	0.0036

4. Calculate the regional-specific standard scores.

Subtract the regional proportion from the provincial proportion and divide these by the standard error derived for each region in step 3. Repeat for each region.

$$\text{Score} = \frac{\text{regional proportion} - \text{provincial proportion}}{\text{regional standard error}}$$

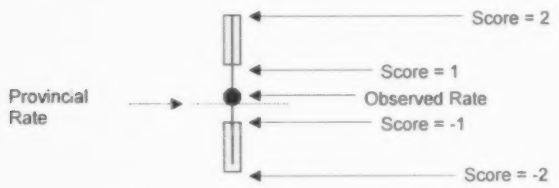
5. Graph the regional-specific standard scores calculated in Step 4.

The following colour scheme is used to differentiate the rates that may differ from the provincial average.

Score	Interpretation	Colour
≥ 2	Higher than provincial average (significant difference in a conventional statistical test ($p<0.05$)	Red
≥ 1 and < 2	Probably higher than provincial average ($p > 0.5$ but < 0.95 that difference is not due to random variation)	Orange
< 1 and > -1	Not likely to differ from provincial average ($p< 0.5$ that difference is not due to random variation)	Yellow
≤ -1 and > -2	Probably lower than provincial average ($p > 0.5$ but < 0.95 that difference is not due to random variation)	Light green
≤ -2	Lower than provincial average (significant difference in a conventional statistical test ($p<0.05$)	Dark green

The figure below illustrates how to interpret the graphic for an individual region. The yellow bars are used to show that the provincial rate crosses between the 1 and –1 score range. The table above lists other colour possibilities by score category.

The black dot represents the value of the rate for each region. The colour of the bars above and below the dot represents the score of the region. The portion of the bar closest to the black dot represents the value for a standard score of 1 or –1, while the part of the bars farthest from the dot represent the value for a score of 2 or –2.



6. Generate maps using the same categories for each region as listed in Step 5.

The graph and map are placed in the same page. The map allows the reader to obtain a quick overview while more detailed information is presented on the graph . The colour assigned to each region is based on the colour of the bars in the graph for the same region. This provides a spatial context to the distribution patterns and consistency among the two graphic elements.

7. Generate a cartogram.

A cartogram is similar to a map. However, each region is represented by a circle that is sized proportionately to the regional population. This graphic is useful for interpreting reported rates by providing an indication of the population size of each region. Each RHA in the cartogram is coloured the same as it is on the provincial map.

Appendix 4: Wigglesworth Classifications of Causes of Perinatal and Neonatal Deaths

A summary of the Wigglesworth classification of causes of death for perinatal and neonatal deaths for 1998 to 2002 appears in Table A77. Details for 2001 and 2002 are in Tables A78 and A79.

Group 1: Deaths before the start of labour

27.5% of deaths were assigned to this category in 2002. Abruptio placenta was a factor in 20.2% of these deaths, 69.0% occurred before 37 weeks gestation, and 70.5% had birthweights less than 2500 grams. Table A80 contains further detail for 2001 and 2002 on this category.

Group 2: Lethal or potentially lethal malformations

This category accounted for 31.1% of 2002 deaths, 56.2% of which were neonatal deaths.

Group 3: Deaths associated with prematurity

Prematurity was associated with 28.1% of deaths in 2002. Almost all (97.0%) had birth weights of less than 1,000 grams, and 75.8% of the deaths under 1,000 grams were neonatal deaths. Table A81 contains further detail on this category for 2001 and 2002.

Group 4: Intrapartum Deaths, Neonatal deaths <4 hours old, Neonatal deaths >1000 grams and >4 hours old with evidence of cerebral birth trauma/asphyxia

This category accounted for 3.8% of deaths in 2002; one third were neonatal deaths. In 38.9% of Group 4 deaths, massive hemorrhage/abruptio placenta was a factor. Further details for 2001 and 2002 appear in Table A82.

Group 5: Defined specific condition

A specific condition was defined in 9.4% of the deaths for 2002. 34.1% of the deaths were neonatal deaths. Cord anomalies/accidents were the most common defined condition, accounting for 36.4% of all deaths in this group. Table A83 contains data for 1998 to 2002 for deaths in this category.

Appendix 5: Resource List

Below are references to reproductive health-related reports and informational Internet sites. All Internet addresses verified May 10, 2004. This list is not intended to be comprehensive.

Reproductive Health-Related Reports

Alberta Health And Wellness Reports

Maternal Risk Factors in Relationship to Birth Outcome
http://www.health.gov.ab.ca/resources/publications/pdf/maternal_risk_factor.PDF
Alberta Congenital Anomalies Surveillance System, 1990-1998
http://www.health.gov.ab.ca/resources/publications/pdf/ACASS_Report5.pdf
Alberta's Report on Comparable Health Indicators
http://www.health.gov.ab.ca/resources/publications/pdf/pircReport.pdf

Other Provincial Reports

Charting Birth Outcome in British Columbia: Determinants of Optimal Health and Ultimate Risk – An Expansion and Update
http://www.vs.gov.bc.ca/stats/features/index.html
Selected Vital Statistics and Health Status Indicators, One Hundred and Thirty-First Annual Report 2002 (British Columbia)
http://www.vs.gov.bc.ca/stats/annual/2002/index.html
Vital Statistics Annual Report, 2002. Saskatchewan Health.
http://www.health.gov.sk.ca/mc_dp_vs_ar_2002.pdf
Manitoba Health Provincial Health Indicators., Health Indicator Working Group, Manitoba Health.
http://www.gov.mb.ca/health/documents/ind-all.pdf
Manitoba Perinatal Health Surveillance Report 1989-1998
http://www.gov.mb.ca/health/publichealth/epiunit/docs/perinatal.pdf
Ontario Women's Health Status Report, Ontario Women's Health Council
http://www.womenshealthcouncil.on.ca/scripts/index_asp?action=31&P_ID=1661&N_ID=1&PT_ID=13&U_ID=0
Accouchements et naissances, Quebec: http://www.msss.gouv.qc.ca/statistiques/accou_naiss.html
La situation démographique au Québec, bilan 2003. Les ménages au tournant du XXIe siècle.
http://www.stat.gouv.qc.ca/publications/demograp/sit_demo_an.htm
2002 Annual Report, Vital Statistics, Health and Wellness, Government of New Brunswick
http://www.gnb.ca/0379/pdf/02vsecrep.pdf
Annual Report 2000-2001, Health and Social Services, Government of Prince Edward Island
http://www.gov.pe.ca/publications/getpublication.php3?number=616
Province of Prince Edward Island 29th Annual Statistical Review 2002
http://www.gov.pe.ca/photos/original/29annualreview.pdf
2002 Nova Scotia Annual Report, Vital Statistics Unit of Service Nova Scotia and Municipal Relations
http://www.gov.ns.ca/snsmr/vstat/annualreports/pdf/2002AnnualReport.pdf
Live birth trends, Community and Integrated Health Boards, Newfoundland and Labrador, 1997-2001:
http://www.nlchi.nf.ca/pdf/livebirth03.pdf
Mortality statistics, Community and Integrated Health Boards, Newfoundland and Labrador, 1997-2001:
http://www.nlchi.nf.ca/pdf/Mortality_Jan04.pdf
Vital Statistics, Bureau of Statistics, Northwest Territories:
http://www.stats.gov.nt.ca/Statinfo/Demographics/VitalStats_81-2001/revised_vital.html

National Reports

Canadian Perinatal Health Report – 2003, Health Canada
http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cphr-rspc03/pdf/cphr-rspc03_e.pdf
Congenital Anomalies in Canada: A Perinatal Health Report, 2002, Health Canada
http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cac-acc02/pdf/cac2002_e.pdf
Women's Health Surveillance Report, Canadian Institute for Health Information
http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=AR_342_E&cw_topic=342

International Reports

Maternal Mortality in 2000: Estimates Developed by WHO, UNICEF and UNFPA (World Health Organization)
http://www.who.int/reproductive-health/publications/maternal_mortality_2000/maternal_mortality_2000.pdf
Unicef Country Statistics http://www.unicef.org/statistics/index.html
National Vital Statistics Reports, Volume 52(10): United States data on 2002 births
http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_02.pdf
United States Center for Disease Control's Reproductive Health Information Source
http://www.cdc.gov/reproductivehealth/index.htm
England Maternity Statistics 2002/03: http://www.publications.doh.gov.uk/public/sb0410.pdf
Births 2002, Australia
http://www.abs.gov.au/Ausstats/abs%40.nsf/b06660592430724fca2568b5007b8619/ff3e15176d6887d8ca2568a9001393b2!
OpenDocument
Deaths 2002, Australia
http://www.abs.gov.au/Ausstats/abs%40.nsf/b06660592430724fca2568b5007b8619/c67a858ba00cb846ca2568a9001393c6!
OpenDocument

Informational Web Sites

Provincial

Alberta Health and Wellness: http://www.health.gov.ab.ca/
Alberta Medical Association: http://www.albertadoctors.org/bcm/ama/ama-website.nsf/frmHome?OpenForm
Northern and Central Alberta Perinatal Outreach Program: http://www.ncapop.ca/index.html
Alberta We//net: http://www.albertawellnet.org/
Regional Health Authorities: http://www.health.gov.ab.ca/regions/index.html
British Columbia Ministry of Health Planning: http://www.gov.bc.ca/healthplanning/
British Columbia Reproductive Care Program: http://www.rcp.gov.bc.ca/
Saskatchewan Health: http://www.health.gov.sk.ca/index.html
Manitoba Health: http://www.gov.mb.ca/health/index.html
Ontario Ministry of Health and Long Term Care: http://www.health.gov.on.ca/
Santé et services sociaux, Quebec: http://www.msss.gouv.qc.ca/index.php
New Brunswick Health and Wellness: http://www.gnb.ca/0051/index-e.asp
Prince Edward Island Health and Social Services: http://www.gov.pe.ca/hss/index.php3
Nova Scotia Department of Health: http://www.gov.ns.ca/health/
Reproductive Care Program of Nova Scotia: http://as01.ucis.dal.ca/rcp/
Department of Health and Community Services, Government of Newfoundland and Labrador:
http://www.gov.nf.ca/health/Default.htm
Newfoundland and Labrador Centre for Health Information: http://www.nlchi.nf.ca/
Yukon Department of Health and Social Services: http://www.hss.gov.yk.ca/
Northwest Territories Health and Social Services: http://www.hlthss.gov.nt.ca/
Nunavut Health and Social Services: http://www.gov.nu.ca/hsssite/hssmain.shtml

Federal
Statistics Canada: http://www.statcan.ca/start.html
Health Canada: http://www.hc-sc.gc.ca/
Canadian Institute for Health Information: http://www.cihi.ca/
Canadian Women's Health Network: http://www.cwhn.ca/
Canadian Medical Association: http://www.cma.ca/cma/common/start.do?lang=2

International
World Health Organization Reproductive Health section: http://www.who.int/health_topics/reproductive_health/en/

Appendix 6: Tables

Table A1 Selected Indicators for Pregnancies and Births, Alberta, 1988 - 2002

Indicator	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Live Births	41,669	42,979	42,633	42,369	41,673	39,905	39,459	38,529	37,472	36,550	37,529	37,778	36,625	37,226	38,282
Estimated Pregnancies[1]	53,018	54,120	53,969	54,131	55,844	54,077	53,818	52,541	51,582	51,614	52,757	52,807	51,765	52,480	53,769
Estimated Pregnancy Rate (per 1,000 Women Aged 15-49)	77.1	77.9	76.3	75.5	77.0	74.0	73.3	71.2	69.3	68.3	68.2	66.7	64.5	64.3	64.6
Spontaneous Abortions	4,849	4,385	4,481	4,649	5,340	5,000	5,110	4,844	4,634	4,502	4,692	4,599	4,486	4,430	4,692
Spontaneous Abortion Rate (per 1,000 Women Aged 15-49)	7.1	6.3	6.3	6.5	7.4	6.8	7.0	6.6	6.2	6.0	6.1	5.8	5.6	5.4	5.6
Spontaneous Abortion Rate (per 100 Estimated Pregnancies)	9.1	8.1	8.3	8.6	9.6	9.2	9.5	9.2	9.0	8.7	8.9	8.7	8.7	8.4	8.7
Induced Abortions	6,203	6,502	6,559	6,803	8,552	8,905	8,983	8,906	9,240	10,313	10,346	10,164	10,417	10,589	10,546
Induced Abortion Rate (per 1,000 Women Aged 15-49)	9.0	9.4	9.3	9.5	11.8	12.2	12.2	12.1	12.4	13.6	13.4	12.8	13.0	13.0	12.7
Induced Abortion Rate (per 100 estimated pregnancies)	11.7	12.0	12.2	12.6	15.3	16.5	16.7	17.0	17.9	20.0	19.6	19.2	20.1	20.2	19.6
Total Induction Rate (per 100 Hospital Deliveries)	12.0	16.4	17.0	17.0	16.7	21.2	21.8	21.9	22.8	23.6	24.1	25.3	25.9	27.0	19.3
Cesarean Section Rate (per 100 Hospital Deliveries)	17.1	16.3	16.1	16.0	15.9	15.8	15.7	15.8	16.2	16.5	17.2	19.1	20.2	22.4	23.2
Mean Maternal Age at Delivery	27.6	27.7	27.8	27.9	28.0	28.1	28.2	28.3	28.5	28.6	28.6	28.7	28.8	28.8	28.9
General Fertility Rate (per 1,000 Women Aged 15-49)	60.6	61.9	60.3	59.1	57.5	54.6	53.7	52.2	50.3	48.3	48.5	47.7	45.6	45.6	46.0
Total Fertility Rate (per 1,000 women aged 15-49)	1,806	1,875	1,861	1,861	1,843	1,790	1,805	1,793	1,757	1,708	1,729	1,716	1,660	1,670	1,686
Crude Birth Rate (per 1,000 Population)	16.7	17.0	16.5	16.2	15.7	14.9	14.6	14.2	13.7	13.1	13.2	12.9	12.3	12.3	12.4
Low Birth Weight Rate (per 100 Live Births)	5.8	5.9	5.9	5.8	5.8	5.7	5.6	6.0	6.1	6.2	6.2	5.9	6.1	6.1	6.5
Singleton Small for Gestational Age Rate (per 100 Live Singleton Births)	10.6	10.6	10.4	10.3	9.8	9.8	9.5	9.9	9.2	9.4	9.1	8.3	7.9	7.8	7.6
High Birth Weight Rate (per 100 Live Births)	10.7	10.9	11.1	11.0	11.4	11.5	11.4	11.3	11.6	11.4	12.3	12.6	12.9	12.9	12.5
Large for Gestational Age Rate (per 100 Live Singleton Births)	9.7	9.5	9.9	9.7	10.7	10.2	10.2	10.3	11.0	10.5	11.4	11.6	12.3	12.5	12.1
Preterm Birth Rate (per 100 Live Births)	6.9	6.6	6.9	6.6	6.8	6.6	6.8	7.0	7.4	7.3	7.5	7.8	8.5	8.3	8.6
Multiple Birth Rate (per 100 Live Births)	2.0	2.1	2.1	2.1	2.3	2.2	2.2	2.3	2.4	2.6	2.7	2.8	3.0	3.1	3.2
Congenital Anomalies Rate (per 1,000 Total Births)	45.0	45.0	46.6	42.0	42.6	36.8	35.7	36.6	30.4	29.5	30.4	30.9	34.1	36.1	34.1
Stillbirths	297	254	296	310	279	267	266	262	236	249	190	266	237	235	249
Stillbirth Rate (per 1,000 Total Births)	7.1	5.9	6.9	7.3	6.7	6.6	6.7	6.8	6.3	6.8	5.0	7.0	6.4	6.3	6.5
Perinatal Mortality rate (per 1,000 Total Births)	10.7	9.2	10.8	9.9	10.5	9.9	10.3	10.8	9.6	9.8	7.2	10.0	9.7	9.2	10.6
Neonatal Mortality Rate (per 1,000 Live Births)	4.4	4.2	5.0	3.4	4.7	3.9	4.7	4.9	4.0	3.6	2.8	3.7	4.1	3.9	5.2
Post-Neonatal Mortality Rate (per 1,000 Live Births)	3.8	3.2	2.9	3.3	2.5	2.6	2.7	2.1	2.2	1.4	1.9	2.0	2.4	1.7	2.0
Infant Mortality Rate (per 1,000 Live Births)	8.2	7.4	7.9	6.7	7.2	6.6	7.3	6.9	6.2	4.9	4.7	5.7	6.5	5.6	7.2

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Death File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.
Alberta Congenital Anomalies Surveillance System, January 2004 release.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. Estimated pregnancies include livebirths, stillbirths, spontaneous abortions, and induced abortions.
Populations are estimated at June 30, as viewed at December 31 of each year.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A2 Estimated Pregnancy Rates (including Live Births, Stillbirths, Spontaneous Abortions, and Induced Abortions) by Maternal Age Group, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)										
		<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44	Unknown[1]
Estimated pregnancies[2]												
88	53,018	90	1,693	3,332	5,025	12,895	19,039	11,871	3,443	558	25	63
89	54,120	115	1,710	3,355	5,065	12,675	19,069	12,802	3,781	517	49	47
90	53,969	103	1,732	3,383	5,115	12,532	18,370	12,986	4,185	612	28	38
91	54,131	117	1,917	3,428	5,345	12,524	17,662	13,230	4,530	651	46	26
92	55,844	147	2,179	3,491	5,670	12,849	17,519	13,969	4,864	743	57	26
93	54,077	119	2,216	3,453	5,669	12,500	16,373	13,592	4,988	783	44	9
94	53,818	120	2,036	3,598	5,634	12,158	16,115	13,622	5,237	877	46	9
95	52,541	119	2,014	3,489	5,503	11,883	15,419	13,318	5,362	878	57	2
96	51,582	96	1,945	3,300	5,245	11,414	15,084	12,987	5,670	1,012	72	2
97	51,614	92	1,899	3,364	5,263	11,557	15,042	12,623	5,812	1,163	60	2
98	52,757	93	1,973	3,473	5,446	11,917	15,131	12,937	5,939	1,186	96	12
99	52,807	81	1,889	3,328	5,217	12,051	15,088	12,777	6,214	1,295	81	3
00	51,765	64	1,675	3,383	5,058	11,850	14,715	12,493	6,223	1,302	58	2
01	52,480	69	1,602	3,396	4,998	11,888	14,799	13,001	6,315	1,329	79	2
02	53,769	85	1,474	3,255	4,729	12,195	15,296	13,553	6,426	1,400	85	0
Estimated pregnancy rate (per 1,000 women in each age group)[3,4,5]												
88	77.1	1.1	31.9	86.7	55.0	120.8	148.1	97.8	35.0	6.9	0.4	
89	77.9	1.3	32.8	87.3	55.9	123.6	150.2	103.2	36.8	6.1	0.8	
90	76.3	1.1	32.9	90.3	56.8	123.8	147.0	102.0	38.7	6.8	0.4	
91	75.5	1.2	36.1	93.8	59.6	124.6	145.9	102.4	39.9	6.9	0.7	
92	77.0	1.5	40.1	96.7	62.7	129.8	150.4	106.9	41.2	7.8	0.8	
93	74.0	1.2	40.5	95.5	62.3	127.9	147.3	103.7	40.9	8.0	0.6	
94	73.3	1.2	36.6	98.6	61.2	127.6	152.0	105.3	42.0	8.5	0.5	
95	71.2	1.2	35.8	94.1	59.0	126.8	150.4	105.8	42.2	8.2	0.6	
96	69.3	0.9	33.5	88.3	54.9	122.9	148.9	107.0	44.1	9.0	0.8	
97	68.3	0.9	31.6	88.2	53.6	121.6	147.9	107.4	44.4	9.9	0.6	
98	68.2	0.9	31.6	87.7	53.4	121.2	145.3	112.9	44.7	9.6	1.0	
99	66.7	0.7	29.3	81.2	49.5	118.0	142.6	113.4	46.4	10.1	0.8	
00	64.5	0.6	25.6	79.1	46.7	114.4	138.7	112.5	46.9	9.9	0.5	
01	64.3	0.6	24.0	76.5	45.0	111.5	138.6	116.0	48.7	9.9	0.7	
02	64.6	0.6	21.8	71.5	41.8	110.3	139.4	119.4	50.9	10.2	0.7	

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:
1. For 2000 to 2002, the number of women with unknown maternal age is not available for spontaneous abortions.
2. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
3. Age-specific rate refers to number of estimated pregnancies per 1,000 women in a specific age group.
4. The age-specific rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 44-49 age groups respectively.
5. Total rate = total estimated pregnancies / number of women aged 15-49 x 1,000.

Populations are estimated at June 30, as viewed at December 31 of each year.
Data include Alberta residents only, with the exception of spontaneous abortion data prior to 2000, which may contain 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A3 Estimated Pregnancy Rates (including Live Births, Stillbirths, Spontaneous Abortions, and Induced Abortions) by Residence RHA, Alberta, 1988 - 2002

Residence RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Estimated pregnancies[1,2]															
1	2,697	2,866	2,868	2,778	2,841	2,738	2,775	2,795	2,677	2,774	2,589	2,620	2,453	2,462	2,488
2	1,516	1,570	1,516	1,415	1,445	1,412	1,404	1,536	1,484	1,528	1,569	1,550	1,632	1,591	1,619
3	17,652	18,275	18,423	18,227	19,026	18,208	18,524	18,000	18,069	18,268	18,911	19,066	19,063	19,077	19,671
4	4,930	4,920	4,833	4,914	5,010	4,845	4,776	4,742	4,650	4,567	4,619	4,693	4,586	4,630	4,798
5	1,544	1,529	1,470	1,418	1,378	1,480	1,451	1,352	1,262	1,274	1,315	1,247	1,202	1,174	1,302
6	17,200	17,411	17,580	17,921	18,409	18,034	17,257	16,555	15,938	15,735	15,998	16,032	15,634	15,885	16,229
7	3,326	3,511	3,270	3,403	3,550	3,389	3,486	3,306	3,217	3,175	3,293	3,270	2,971	3,100	3,176
8	2,475	2,453	2,359	2,475	2,466	2,371	2,500	2,506	2,538	2,454	2,532	2,513	2,390	2,439	2,492
9	1,442	1,388	1,461	1,405	1,442	1,402	1,359	1,391	1,427	1,409	1,389	1,392	1,436	1,520	1,619
Unknown	58	35	47	36	32	23	56	145	196	82	38	44	41	38	36
Alberta	**52,840**	**53,958**	**53,827**	**53,992**	**55,599**	**53,902**	**53,588**	**52,328**	**51,458**	**51,266**	**52,253**	**52,427**	**51,408**	**51,916**	**53,430**
Rate per 1,000 women aged 15-49															
1	78.2	83.2	82.2	78.9	80.0	76.8	77.3	77.3	73.7	75.9	70.6	70.6	65.6	65.7	66.4
2	73.3	75.8	72.5	67.3	68.7	66.8	65.0	70.2	66.6	67.6	67.9	65.5	68.0	64.9	65.1
3	77.1	78.4	77.1	74.9	77.2	73.2	73.7	70.6	69.5	68.4	68.2	66.6	65.3	63.9	64.2
4	79.4	78.6	75.9	76.0	76.2	72.9	71.4	70.1	68.0	66.1	65.0	64.6	62.2	61.9	63.1
5	63.2	63.0	60.8	58.2	56.0	59.8	57.8	53.8	50.0	50.3	51.3	48.5	46.5	45.0	49.4
6	74.0	74.3	73.8	74.2	75.4	73.1	70.4	68.1	65.8	64.6	65.0	63.9	61.7	61.8	62.0
7	83.7	87.5	80.7	83.3	85.7	81.1	82.3	77.3	75.0	73.3	74.9	73.6	66.9	69.3	70.4
8	83.8	82.9	78.2	81.6	81.0	78.6	82.3	80.6	79.9	76.2	76.8	74.7	70.6	71.5	72.1
9	95.4	90.6	95.2	89.9	91.6	89.3	87.3	89.9	91.3	85.8	81.4	79.9	80.7	83.0	84.0
Alberta	**76.9**	**77.7**	**76.1**	**75.3**	**76.6**	**73.7**	**73.0**	**70.9**	**69.1**	**67.8**	**67.5**	**66.2**	**64.1**	**63.6**	**64.2**

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:
1. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
2. Regional pregnancy estimates differ slightly from non-regional pregnancy estimates (reported in other tables) because regional induced abortion data differ from non-regional induced abortion data (due to differences in source).

Populations are estimated at June 30, as viewed at December 31 of each year.
RHA boundaries are current as of April 2003
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A4 Estimated Pregnancy Rate (per 1,000 women in each age group) by Residence RHA and Maternal Age Group, Alberta, 2000 - 2002

Residence RHA	Total[1]	Maternal Age Group (Years)									
		<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44
2000											
1	65.6	-	23.2	72.0	50.6	103.5	154.4	111.6	41.1	7.6	0.4
2	68.0	0.6	20.2	87.5	51.5	130.2	162.9	104.6	27.9	4.8	1.2
3	65.3	0.6	25.8	77.3	60.5	90.6	118.9	118.3	50.8	10.0	0.2
4	62.2	0.4	25.7	71.6	50.9	118.8	148.7	98.4	29.7	5.3	0.6
5	46.5	0.7	18.9	41.6	29.9	73.0	134.1	76.4	28.8	6.1	0.3
6	61.7	0.8	23.8	75.4	57.2	91.6	124.9	107.1	41.7	7.4	0.4
7	66.9	0.8	26.7	95.1	57.8	135.0	150.5	91.5	35.5	5.4	0.2
8	70.6	0.4	33.1	96.1	61.6	141.8	157.4	86.5	31.4	4.9	0.5
9	80.7	-	48.3	113.5	69.0	155.6	152.0	100.6	42.4	8.3	1.0
Alberta	**64.1**	**0.6**	**25.6**	**77.8**	**46.2**	**112.8**	**138.1**	**112.1**	**46.7**	**9.9**	**0.5**
2001											
1	65.7	0.5	21.1	75.5	43.7	119.1	154.1	118.9	40.7	9.0	0.6
2	64.9	0.6	26.4	71.8	44.6	122.7	166.0	108.4	33.1	6.4	0.3
3	63.9	0.3	22.3	70.9	41.7	96.9	123.7	125.2	58.4	12.4	0.8
4	61.9	0.7	30.4	82.8	51.2	122.5	153.4	97.8	35.4	7.2	0.6
5	45.0	0.5	9.8	46.4	23.7	82.5	126.7	84.2	31.5	5.5	0.8
6	61.8	0.8	22.7	68.8	41.3	101.0	134.0	117.0	48.7	9.4	0.6
7	69.3	0.8	25.9	91.1	51.2	153.4	172.5	102.2	32.2	7.8	0.5
8	71.5	1.4	29.7	93.3	55.1	150.3	167.9	93.0	38.8	3.7	0.9
9	83.0	0.7	41.6	122.3	74.1	167.2	163.6	108.7	48.0	8.0	1.4
Alberta	**63.6**	**0.6**	**24.0**	**74.6**	**44.2**	**109.4**	**137.3**	**115.4**	**48.4**	**9.8**	**0.7**
2002											
1	66.4	0.2	23.8	69.9	42.5	119.1	165.6	109.2	43.9	8.7	0.6
2	65.1	0.3	14.8	70.8	38.4	130.1	164.5	105.2	36.8	6.0	0.8
3	64.2	1.0	20.6	65.8	38.9	96.1	123.0	128.7	60.5	12.7	1.1
4	63.1	0.7	24.7	79.2	45.8	124.2	155.2	107.5	37.1	7.9	0.3
5	49.4	0.7	14.2	48.1	28.1	85.4	144.2	93.3	30.2	8.1	1.3
6	62.0	0.7	20.5	66.4	39.1	100.1	134.6	118.2	51.5	9.6	0.5
7	70.4	0.8	27.5	80.9	48.4	157.9	170.0	107.9	39.0	7.7	0.7
8	72.1	1.0	26.7	97.7	55.4	145.6	162.7	106.9	36.9	7.2	0.4
9	84.0	0.3	25.8	107.1	58.7	166.2	183.8	117.3	46.6	6.0	1.2
Alberta	**64.2**	**0.8**	**21.7**	**70.7**	**41.4**	**109.2**	**138.5**	**119.0**	**50.8**	**10.2**	**0.7**

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:
1. Total rate = total pregnancies / number of women aged 15-49 x 1,000.
2. Regional pregnancy estimates differ slightly from non-regional pregnancy estimates (reported in other tables) because regional induced abortion data differ from non-regional induced abortion data (due to differences in sourc

Populations are estimated at June 30, as viewed at December 31 of each year.
RHA boundaries are current as of April 2003.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A5 Spontaneous Abortion Rates (per 1,000 Women, and per 100 Estimated Pregnancies) by Maternal Age Group, Alberta, 1988 - 2002

Year	Maternal Age Group (Years)											
	Total	<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44	Unknown[1]
Spontaneous Abortions												
88	4,849	31	159	283	442	1,083	1,587	1,078	444	109	12	63
89	4,385	27	175	263	438	893	1,415	1,040	417	85	23	47
90	4,481	23	156	256	412	974	1,332	1,087	479	124	12	38
91	4,649	22	185	261	446	1,001	1,319	1,161	524	129	21	26
92	5,340	18	202	294	496	1,136	1,500	1,307	636	179	43	25
93	5,000	20	234	333	567	988	1,323	1,277	601	197	19	8
94	5,110	23	172	333	505	1,087	1,339	1,229	680	210	28	9
95	4,844	22	186	282	468	996	1,326	1,143	653	199	35	2
96	4,634	27	178	261	439	915	1,226	1,109	657	219	41	1
97	4,502	18	152	270	422	883	1,194	1,100	627	221	37	0
98	4,692	11	151	284	435	913	1,251	1,099	678	254	51	0
99	4,599	15	148	251	399	859	1,230	1,100	699	260	36	1
00	4,486	15	134	266	400	878	1,184	1,037	700	240	30	2
01	4,430	14	126	241	367	831	1,150	1,056	747	232	32	1
02	4,692	26	115	262	377	921	1,202	1,136	747	243	40	0
Rate per 1,000 Women in Each Age Group[2,3]												
88	7.1	0.4	3.0	7.4	4.8	10.1	12.3	8.9	4.5	1.4	0.2	
89	6.3	0.3	3.4	6.8	4.8	8.7	11.1	8.4	4.1	1.0	0.4	
90	6.3	0.3	3.0	6.8	4.6	9.6	10.7	8.5	4.4	1.4	0.2	
91	6.5	0.2	3.5	7.1	5.0	10.0	10.9	9.0	4.6	1.4	0.3	
92	7.4	0.2	3.7	8.1	5.5	11.5	12.9	10.0	5.4	1.9	0.6	
93	6.8	0.2	4.3	9.2	6.2	10.1	11.9	9.7	4.9	2.0	0.2	
94	7.0	0.2	3.1	9.1	5.5	11.4	12.6	9.5	5.5	2.0	0.3	
95	6.6	0.2	3.3	7.6	5.0	10.6	12.9	9.1	5.1	1.9	0.4	
96	6.2	0.3	3.1	7.0	4.6	9.9	12.1	9.1	5.1	1.9	0.4	
97	6.0	0.2	2.5	7.1	4.3	9.3	11.7	9.4	4.8	1.9	0.4	
98	6.1	0.1	2.4	7.2	4.3	9.3	12.0	9.6	5.1	2.1	0.5	
99	5.8	0.1	2.3	6.1	3.8	8.4	11.6	9.8	5.2	2.0	0.3	
00	5.6	0.1	2.0	6.2	3.7	8.5	11.2	9.3	5.3	1.8	0.3	
01	5.4	0.1	1.9	5.4	3.3	7.8	10.8	9.4	5.8	1.7	0.3	
02	5.6	0.2	1.7	5.8	3.3	8.3	11.0	10.0	5.9	1.8	0.3	
Rate per 100 Estimated Pregnancies in Each Age Group[4,5]												
88	9.1	31.3	9.4	8.5	8.8	8.4	8.3	9.1	12.9	19.5	48.0	
89	8.1	23.5	10.2	7.8	8.6	7.0	7.4	8.1	11.0	16.4	46.9	
90	8.3	22.3	9.0	7.6	8.1	7.8	7.3	8.4	11.4	20.3	42.9	
91	8.6	18.8	9.7	7.6	8.3	8.0	7.5	8.8	11.6	19.8	45.7	
92	9.6	12.2	9.3	8.4	8.7	8.8	8.6	9.4	13.1	24.1	75.4	
93	9.2	16.8	10.6	9.6	10.0	7.9	8.1	9.4	12.0	25.2	43.2	
94	9.5	19.2	8.4	9.3	9.0	8.9	8.3	9.0	13.0	23.9	60.9	
95	9.2	18.5	9.2	8.1	8.5	8.4	8.6	8.6	12.2	22.7	61.4	
96	9.0	28.1	9.2	7.9	8.4	8.0	8.1	8.5	11.6	21.6	56.9	
97	8.7	19.6	8.0	8.0	8.0	7.6	7.9	8.7	10.8	19.0	61.7	
98	8.9	11.8	7.7	8.2	8.0	7.7	8.3	8.5	11.4	21.4	53.1	
99	8.7	18.5	7.8	7.5	7.6	7.1	8.2	8.6	11.2	20.1	44.4	
00	8.7	23.4	8.0	7.9	7.9	7.4	8.0	8.3	11.2	18.4	51.7	
01	8.4	20.3	7.9	7.1	7.3	7.0	7.8	8.1	11.8	17.5	40.5	
02	8.7	30.6	7.8	8.0	8.0	7.6	7.9	8.4	11.6	17.4	47.1	

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release
Clinics Files, Alberta Health and Wellness
Fee-for-Services Claims Files, Alberta Health and Wellness
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness

Notes:
1. For 2000 to 2002, the number of women with unknown maternal age is not available
2. Total rate = total spontaneous abortions / number of women aged 15-49 x 1,000
3. The age-specific rates for age groups <15 and >44 are calculated based on female populations in the 10-14 and 44-49 age groups, respectively.
4. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions
5. Total rate = total spontaneous abortions / number of estimated pregnancies for women aged 15-49 x 1,000

Populations are estimated at June 30, as viewed at December 31 of each year.
Data include Alberta residents only, with the exception of spontaneous abortion data prior to 2000, which may contain 'o of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction

Table A6 Spontaneous Abortion Rates (per 1,000 Women aged 15-49 and per 100 Estimated Pregnancies) by Residence RHA, Alberta, 1988 - 2002

Residence RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Spontaneous Abortions															
1	253	265	336	344	303	269	296	305	336	309	309	248	223	213	237
2	117	141	103	97	85	94	133	114	126	131	137	143	160	147	161
3	1,631	1,401	1,508	1,631	1,736	1,543	1,731	1,587	1,631	1,561	1,657	1,684	1,554	1560	1670
4	462	389	453	405	435	391	423	461	391	382	399	399	410	416	416
5	156	136	130	132	139	147	139	133	96	110	128	123	118	122	130
6	1,568	1,454	1,452	1,476	1,940	1,879	1,681	1,585	1,363	1,338	1,362	1,298	1,351	1337	1334
7	292	310	229	231	326	309	328	279	259	263	280	289	279	273	304
8	208	157	156	217	228	226	240	217	254	256	278	258	242	225	260
9	158	132	112	115	147	138	107	129	121	131	123	134	129	117	164
Unknown	4	.	2	1	1	4	32	34	57	21	19	23	20	20	16
Alberta	**4,849**	**4,385**	**4,481**	**4,649**	**5,340**	**5,000**	**5,110**	**4,844**	**4,634**	**4,502**	**4,692**	**4,599**	**4,486**	**4,430**	**4,692**
Rate per 1,000 Women Aged 15-49															
1	7.3	7.7	9.6	9.8	8.5	7.5	8.2	8.4	9.2	8.5	8.4	6.7	6.0	5.7	6.3
2	5.7	6.8	4.9	4.6	4.0	4.4	6.2	5.2	5.7	5.8	5.9	6.0	6.7	6.0	6.5
3	7.1	6.0	6.3	6.7	7.0	6.2	6.9	6.2	6.3	5.8	6.0	5.9	5.3	5.2	5.4
4	7.4	6.2	7.1	6.3	6.6	5.9	6.3	6.8	5.7	5.5	5.6	5.5	5.6	5.6	5.5
5	6.4	5.6	5.4	5.4	5.6	5.9	5.5	5.3	3.8	4.3	5.0	4.8	4.6	4.7	4.9
6	6.8	6.2	6.1	6.1	7.9	7.6	6.9	6.5	5.6	5.5	5.5	5.2	5.3	5.2	5.1
7	7.4	7.7	5.7	5.7	7.9	7.4	7.7	6.5	6.0	6.1	6.4	6.5	6.3	6.1	6.7
8	7.0	5.3	5.2	7.2	7.5	7.5	7.9	7.0	8.0	7.9	8.4	7.7	7.1	6.6	7.5
9	10.5	8.6	7.3	7.4	9.3	8.8	6.9	8.3	7.7	8.0	7.2	7.7	7.3	6.4	8.5
Alberta	**7.1**	**6.3**	**6.3**	**6.5**	**7.4**	**6.8**	**7.0**	**6.6**	**6.2**	**6.0**	**6.1**	**5.8**	**5.6**	**5.4**	**5.6**
Rate per 100 Estimated Pregnancies[1,2]															
1	9.4	9.2	11.7	12.4	10.7	9.8	10.7	10.9	12.6	11.1	11.9	9.5	9.1	8.7	9.5
2	7.7	9.0	6.8	6.9	5.9	6.7	9.5	7.4	8.5	8.6	8.7	9.2	9.8	9.2	9.9
3	9.2	7.7	8.2	8.9	9.1	8.5	9.3	8.8	9.0	8.5	8.8	8.8	8.2	8.2	8.5
4	9.4	7.9	9.4	8.2	8.7	8.1	8.9	9.7	8.4	8.4	8.6	8.5	8.9	9.0	8.7
5	10.1	8.9	8.8	9.3	10.1	9.9	9.6	9.8	7.6	8.6	9.7	9.9	9.8	10.4	10.0
6	9.1	8.4	8.3	8.2	10.5	10.4	9.7	9.6	8.6	8.5	8.5	8.1	8.6	8.4	8.2
7	8.8	8.8	7.0	6.8	9.2	9.1	9.4	8.4	8.1	8.3	8.5	8.8	9.4	8.8	9.6
8	8.4	6.4	6.6	8.8	9.2	9.5	9.6	8.7	10.0	10.4	11.0	10.3	10.1	9.2	10.4
9	11.0	9.5	7.7	8.2	10.2	9.8	7.9	9.3	8.5	9.3	8.9	9.6	9.0	7.7	10.1
Alberta	**9.2**	**8.1**	**8.3**	**8.6**	**9.6**	**9.3**	**9.5**	**9.3**	**9.0**	**8.8**	**9.0**	**8.8**	**8.7**	**8.5**	**8.8**

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:
1. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
2. Regional pregnancy estimates differ slightly from non-regional pregnancy estimates (reported in other tables) because regional induced abortion data differ from non-regional induced abortion data (due to differences in source).

Populations are estimated at June 30, as viewed at December 31 of each year.
RHA boundaries are current as of April 2003
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A7 Induced Abortions by Age, and Age-Specific Induced Abortion Rate for Women and for Pregnancies, Alberta, 1988 – 2002

Year	Total	< 15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	> 44	Unknown
					Maternal Age Group (Years)							
Number of Induced Abortions												
88	6,203	33	563	985	1,548	2,015	1,372	760	362	108	5	0
89	6,502	54	513	965	1,478	2,077	1,498	855	412	117	11	0
90	6,559	44	515	907	1,422	2,131	1,426	952	447	131	6	0
91	6,803	47	578	911	1,489	2,155	1,466	1,003	508	128	7	0
92	8,552	76	816	1097	1,913	2,692	1,849	1,227	645	141	9	0
93	8,905	63	885	1,212	2,097	2,817	1,737	1,290	739	154	8	0
94	8,983	59	832	1,276	2,108	2,813	1,794	1,318	708	179	4	0
95	8,906	69	817	1,203	2,020	2,773	1,795	1,277	758	207	7	0
96	9,240	38	851	1,250	2,101	2,907	1,937	1,220	800	221	15	1
97	10,313	47	911	1,390	2,301	3,272	2,081	1,423	903	275	11	0
98	10,346	57	955	1,442	2,397	3,263	2,109	1,321	898	280	21	0
99	10,164	43	892	1,327	2,219	3,284	2,115	1,336	870	286	11	0
00	10,417	33	795	1,423	2,218	3,452	2,178	1,357	881	284	14	0
01	10,589	30	786	1,534	2,320	3,481	2,137	1,391	909	305	16	0
02	10,546	45	737	1,390	2,127	3,441	2,204	1,450	918	346	15	0
Age-Specific Rate (per 1,000 Women in each age group) [1,2]												
	15-49	< 15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44		
88	9.0	0.4	10.6	25.6	16.9	18.9	10.7	6.3	3.7	1.3		
89	9.4	0.6	9.8	25.1	16.3	20.3	11.8	6.9	4.0	1.4		
90	9.3	0.5	9.8	24.2	15.8	21.0	11.4	7.5	4.1	1.5		
91	9.5	0.5	10.9	24.9	16.6	21.4	12.1	7.8	4.5	1.4		
92	11.8	0.8	15.0	30.4	21.2	27.2	15.9	9.4	5.5	1.5		
93	12.2	0.6	16.2	33.5	23.1	28.8	15.6	9.8	6.1	1.6		
94	12.2	0.6	15.0	35.0	22.9	29.5	16.9	10.2	5.7	1.7		
95	12.1	0.7	14.5	32.4	21.6	29.6	17.5	10.1	6.0	1.9		
96	12.4	0.4	14.6	33.4	22.0	31.3	19.1	10.1	6.2	2.0		
97	13.6	0.4	15.2	36.4	23.4	34.4	20.5	12.1	6.9	2.3		
98	13.4	0.5	15.3	36.4	23.5	33.2	20.3	11.5	6.8	2.3		
99	12.8	0.4	13.8	32.4	21.0	32.1	20.0	11.9	6.5	2.2		
00	13.0	0.3	12.1	33.3	20.5	33.3	20.5	12.2	6.6	2.2		
01	13.0	0.3	11.8	34.6	20.9	32.6	20.0	12.4	7.0	2.3		
02	12.7	0.4	10.9	30.5	18.8	31.1	20.1	12.8	7.3	2.5		
Age-Specific Rate (per 100 estimated pregnancies in each age group) [1,2]												
	15-49	< 15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44		
88	11.7	33.3	33.3	29.6	30.8	15.6	7.2	6.4	10.5	19.4		
89	12.0	47.0	30.0	28.8	29.2	16.4	7.9	6.7	10.9	22.6		
90	12.2	42.7	29.7	26.8	27.8	17.0	7.8	7.3	10.7	21.4		
91	12.6	40.2	30.2	26.6	27.9	17.2	8.3	7.6	11.2	19.7		
92	15.3	51.7	37.4	31.4	33.7	21.0	10.6	8.8	13.3	19.0		
93	16.5	52.9	39.9	35.1	37.0	22.5	10.6	9.5	14.8	19.7		
94	16.7	49.2	40.9	35.5	37.4	23.1	11.1	9.7	13.5	20.4		
95	17.0	58.0	40.6	34.5	36.7	23.3	11.6	9.6	14.1	23.6		
96	17.9	39.6	43.8	37.9	40.1	25.5	12.8	9.4	14.1	21.8		
97	20.0	51.1	48.0	41.3	43.7	28.3	13.8	11.3	15.5	23.6		
98	19.6	61.3	48.4	41.5	44.0	27.4	13.9	10.2	15.1	23.6		
99	19.2	53.1	47.2	39.9	42.5	27.3	14.0	10.5	14.0	22.1		
00	20.1	51.6	47.5	42.1	43.9	29.1	14.8	10.9	14.2	21.8		
01	20.2	43.5	49.1	45.2	46.4	29.3	14.4	10.7	14.4	22.9		
02	19.6	52.9	50.0	42.7	45.0	28.2	14.4	10.7	14.3	24.7		

Sources: Clinics Files, Alberta Health and Wellness.

Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:

1. The age-specific rates refer to number of induced abortions per 1,000 women or per 100 pregnancies in a specific age group.
2. The age-specific rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 45-49 age groups respectively.

Populations are estimated at June 30, as viewed at December 31 of each year.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A8 Induced Abortions by Facility Type, Alberta, 1988 - 2002

Year	Total	Acute Care Hospital		Private Clinic	
		Cases	%	Cases	%
88	**6,203**	6,203	100.0	0	0.0
89	**6,502**	6,502	100.0	0	0.0
90	**6,559**	6,559	100.0	0	0.0
91	**6,803**	6,292	92.5	511	7.5
92	**8,552**	6,131	71.7	2,421	28.3
93	**8,905**	6,368	71.5	2,537	28.5
94	**8,983**	6,696	74.5	2,287	25.5
95	**8,906**	6,607	74.2	2,299	25.8
96	**9,240**	5,955	64.4	3,285	35.6
97	**10,313**	6,353	61.6	3,960	38.4
98	**10,346**	6,053	58.5	4,293	41.5
99	**10,164**	5,904	58.1	4,260	41.9
00	**10,417**	5,895	56.6	4,522	43.4
01	**10,589**	5,447	51.4	5,142	48.6
02	**10,546**	5,169	49.0	5,377	51.0

Source: Clinics Files, Alberta Health and Wellness.

Notes: The clinics opened in the Fall of 1991.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A9 Induced Abortions by Week of Gestation and Maternal Age Group, Alberta, 2000 - 2002 Combined

Age Group (Years)	Total	Week of Gestation											
		< 9		9 -12		13 -16		17-20		>20		Unknown	
		Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
2000													
<15	33	13	39.4	14	42.4	4	12.1	2	6.1	0	0.0	0	0.0
15-17	795	238	29.9	419	52.7	87	10.9	49	6.2	2	0.3	0	0.0
18-19	1,423	510	35.8	688	48.3	135	9.5	87	6.1	3	0.2	0	0.0
15-19	2,218	748	33.7	1,107	49.9	222	10.0	136	6.1	5	0.2	0	0.0
20-24	3,452	1,416	41.0	1,618	46.9	270	7.8	145	4.2	3	0.1	0	0.0
25-29	2,178	1,029	47.2	920	42.2	158	7.3	68	3.1	3	0.1	0	0.0
30-34	1,357	701	51.7	533	39.3	83	6.1	40	2.9	0	0.0	0	0.0
35-39	881	460	52.2	349	39.6	43	4.9	28	3.2	1	0.1	0	0.0
40-44	284	145	51.1	108	38.0	19	6.7	12	4.2	0	0.0	0	0.0
>44	14	6	42.9	7	50.0	1	7.1	0	0.0	0	0.0	0	0.0
Total	10,417	4,518	43.4	4,656	44.7	800	7.7	431	4.1	12	0.1	0	0.0
2001													
<15	30	8	26.7	19	63.3	1	3.3	2	6.7	0	0.0	0	0.0
15-17	786	240	30.5	417	53.1	85	10.8	44	5.6	0	0.0	0	0.0
18-19	1,534	485	31.6	793	51.7	165	10.8	90	5.9	1	0.1	0	0.0
15-19	2,320	725	31.3	1,210	52.2	250	10.8	134	5.8	1	0.0	0	0.0
20-24	3,481	1,320	37.9	1,716	49.3	302	8.7	139	4.0	4	0.1	0	0.0
25-29	2,137	963	45.1	934	43.7	167	7.8	71	3.3	2	0.1	0	0.0
30-34	1,391	676	48.6	579	41.6	92	6.6	42	3.0	1	0.1	1	0.1
35-39	909	454	49.9	355	39.1	56	6.2	43	4.7	1	0.1	0	0.0
40-44	305	151	49.5	119	39.0	17	5.6	18	5.9	0	0.0	0	0.0
>44	16	10	62.5	5	31.3	1	6.3	0	0.0	0	0.0	0	0.0
Total	10,589	4,307	40.7	4,937	46.6	886	8.4	449	4.2	9	0.1	1	0.0
2002													
<15	45	12	26.7	24	53.3	7	15.6	2	4.4	0	0.0	0	0.0
15-17	737	262	35.5	350	47.5	79	10.7	43	5.8	3	0.4	0	0.0
18-19	1,390	523	37.6	681	49.0	128	9.2	57	4.1	0	0.0	1	0.1
15-19	2,127	785	36.9	1,031	48.5	207	9.7	100	4.7	3	0.1	1	0.0
20-24	3,441	1,461	42.5	1,541	44.8	303	8.8	112	3.3	11	0.3	13	0.4
25-29	2,204	1,076	48.8	842	38.2	176	8.0	83	3.8	9	0.4	18	0.8
30-34	1,450	774	53.4	515	35.5	102	7.0	43	3.0	10	0.7	6	0.4
35-39	918	460	50.1	354	38.6	59	6.4	36	3.9	5	0.5	4	0.4
40-44	346	190	54.9	129	37.3	15	4.3	11	3.2	1	0.3	0	0.0
>44	15	7	46.7	5	33.3	2	13.3	1	6.7	0	0.0	0	0.0
Total	10,546	4,765	45.2	4,441	42.1	871	8.3	388	3.7	39	0.4	42	0.4

Source: Clinics Files, Alberta Health and Wellness.

Notes: Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A10 Induced Abortions by Week of Gestation and Facility Type, Alberta, 1988 - 2002

Year	Total	Week of Gestation											
		<9		9-12		13-16		17-20		>20		Unknown	
		Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
All Facilities													
88	6,203	1,692	27.3	3,838	61.9	477	7.7	188	3.0	8	0.1	0	0.0
89	6,502	1,785	27.5	4,388	67.5	265	4.1	54	0.8	9	0.1	1	0.0
90	6,559	2,055	31.3	4,256	64.9	200	3.0	44	0.7	4	0.1	0	0.0
91	6,803	1,324	19.5	5,089	74.8	338	5.0	49	0.7	3	0.0	0	0.0
92	8,552	2,585	30.2	5,179	60.6	637	7.4	144	1.7	7	0.1	0	0.0
93	8,905	2,460	27.6	5,606	63.0	651	7.3	180	2.0	8	0.1	0	0.0
94	8,983	2,643	29.4	5,584	62.2	549	6.1	198	2.2	9	0.1	0	0.0
95	8,906	2,500	28.1	5,691	63.9	502	5.6	195	2.2	18	0.2	0	0.0
96	9,240	3,510	38.0	5,016	54.3	490	5.3	217	2.3	7	0.1	0	0.0
97	10,313	5,073	49.2	4,356	42.2	626	6.1	253	2.5	5	0.0	0	0.0
98	10,346	4,585	44.3	4,570	44.2	786	7.6	375	3.6	24	0.2	6	0.1
99	10,164	4,137	40.7	4,690	46.1	910	9.0	402	4.0	25	0.2	0	0.0
00	10,417	4,518	43.4	4,656	44.7	800	7.7	431	4.1	12	0.1	0	0.0
01	10,589	4,307	40.7	4,937	46.6	886	8.4	449	4.2	9	0.1	1	0.0
02	10,546	4,765	45.2	4,441	42.1	871	8.3	388	3.7	39	0.4	42	0.4
Acute Care Hospitals													
88	6,203	1,692	27.3	3,838	61.9	477	7.7	188	3.0	8	0.1	0	0.0
89	6,502	1,785	27.5	4,388	67.5	265	4.1	54	0.8	9	0.1	1	0.0
90	6,559	2,055	31.3	4,256	64.9	200	3.0	44	0.7	4	0.1	0	0.0
91	6,292	1,284	20.4	4,747	75.4	219	3.5	39	0.6	3	0.0	0	0.0
92	6,131	2,098	34.2	3,869	63.1	117	1.9	43	0.7	4	0.1	0	0.0
93	6,368	1,889	29.7	4,295	67.4	140	2.2	38	0.6	6	0.1	0	0.0
94	6,696	2,030	30.3	4,485	67.0	132	2.0	44	0.7	5	0.1	0	0.0
95	6,607	1,550	23.5	4,853	73.5	139	2.1	53	0.8	12	0.2	0	0.0
96	5,955	1,938	32.5	3,790	63.6	151	2.5	74	1.2	2	0.0	0	0.0
97	6,353	2,907	45.8	2,983	47.0	352	5.5	108	1.7	3	0.0	0	0.0
98	6,053	2,338	38.6	3,115	51.5	380	6.3	203	3.4	17	0.3	0	0.0
99	5,904	2,053	34.8	3,212	54.4	421	7.1	197	3.3	21	0.4	0	0.0
00	5,895	2,424	41.1	2,933	49.8	342	5.8	191	3.2	5	0.1	0	0.0
01	5,447	2,068	38.0	2,844	52.2	309	5.7	222	4.1	3	0.1	1	0.0
02	5,169	2,160	41.8	2,497	48.3	255	4.9	182	3.5	33	0.6	42	0.8
Private Clinics													
91	511	40	7.8	342	66.9	119	23.3	10	2.0	0	0.0	0	0.0
92	2,421	487	20.1	1,310	54.1	520	21.5	101	4.2	3	0.1	0	0.0
93	2,537	571	22.5	1,311	51.7	511	20.1	142	5.6	2	0.1	0	0.0
94	2,287	613	26.8	1,099	48.1	417	18.2	154	6.7	4	0.2	0	0.0
95	2,299	950	41.3	838	36.5	363	15.8	142	6.2	6	0.3	0	0.0
96	3,285	1,572	47.9	1,226	37.3	339	10.3	143	4.4	5	0.2	0	0.0
97	3,960	2,166	54.7	1,373	34.7	274	6.9	145	3.7	2	0.1	0	0.0
98	4,293	2,247	52.3	1,455	33.9	406	9.5	172	4.0	7	0.2	6	0.1
99	4,260	2,084	48.9	1,478	34.7	489	11.5	205	4.8	4	0.1	0	0.0
00	4,522	2,094	46.3	1,723	38.1	458	10.1	240	5.3	7	0.2	0	0.0
01	5,142	2,239	43.5	2,093	40.7	577	11.2	227	4.4	6	0.1	0	0.0
02	5,377	2,605	48.4	1,944	36.2	616	11.5	206	3.8	6	0.1	0	0.0

Source: Clinics Files, Alberta Health and Wellness.

Notes: The clinics opened in the Fall of 1991.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A11 Induced Abortions by Facility Regions, Alberta, 1988 - 2002

Year	Total	Calgary (Hospitals and Clinics)		Edmonton (Hospitals and Clinics)		Other Areas (Hospitals)	
		Cases	%	Cases	%	Cases	%
88	6,203	3,199	51.6	1,919	30.9	1,085	17.5
89	6,502	3,132	48.2	2,385	36.7	985	15.1
90	6,559	3,490	53.2	2,387	36.4	682	10.4
91	6,803	3,234	47.5	2,831	41.6	738	10.8
92	8,552	4,549	53.2	3,527	41.2	476	5.6
93	8,905	4,722	53.0	3,659	41.1	524	5.9
94	8,983	4,840	53.9	3,595	40.0	548	6.1
95	8,906	4,755	53.4	3,624	40.7	527	5.9
96	9,240	4,917	53.2	3,855	41.7	468	5.1
97	10,313	5,398	52.3	4,462	43.3	453	4.4
98	10,346	5,668	54.8	4,297	41.5	381	3.7
99	10,164	5,483	53.9	4,326	42.6	355	3.5
00	10,417	5,636	54.1	4,477	43.0	304	2.9
01	10,589	5,734	54.2	4,653	43.9	202	1.9
02	10,546	5,565	52.8	4,765	45.2	216	2.0

Source: Clinics Files, Alberta Health and Wellness.

Notes: The clinics opened in the Fall of 1991.
Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A12 Induced Abortions and Induced Abortion Rate by Residence RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Induced Abortions															
1	217	237	209	216	264	260	270	291	289	321	259	290	276	278	272
2	139	133	105	101	140	156	133	133	178	201	182	163	240	206	223
3	2,684	2,810	2,954	2,855	3,593	3,745	3,796	3,725	3,867	4,187	4,276	4,309	4,358	4,331	4,335
4	445	436	354	386	524	515	560	540	580	625	639	616	678	703	740
5	84	72	83	90	122	163	167	172	150	172	182	155	171	163	189
6	1,839	2,080	2,108	2,356	2,942	3,141	3,033	2,971	3,067	3,510	3,399	3,339	3,426	3,429	3,523
7	216	222	211	272	309	298	335	324	335	391	406	421	392	410	454
8	252	226	247	238	267	283	295	300	330	332	327	292	320	292	300
9	95	89	101	115	116	150	140	126	181	165	156	184	182	201	154
Unknown	54	35	45	35	30	19	24	111	139	61	16	15	17	12	17
Alberta	**6,025**	**6,340**	**6,417**	**6,664**	**8,307**	**8,730**	**8,753**	**8,693**	**9,116**	**9,965**	**9,842**	**9,784**	**10,060**	**10,025**	**10,207**
Induced Abortion Rate (per 1,000 Women Aged 15-49)															
1	6.3	6.9	6.0	6.1	7.4	7.3	7.5	8.0	8.0	8.8	7.1	7.8	7.4	7.4	7.3
2	6.7	6.4	5.0	4.8	6.7	7.4	6.2	6.1	8.0	8.9	7.9	6.9	10.0	8.4	9.0
3	11.7	12.1	12.4	11.7	14.6	15.1	15.1	14.6	14.9	15.7	15.4	15.0	14.9	14.5	14.1
4	7.2	7.0	5.6	6.0	8.0	7.7	8.4	8.0	8.5	9.0	9.0	8.5	9.2	9.4	9.7
5	3.4	3.0	3.4	3.7	5.0	6.6	6.7	6.8	5.9	6.8	7.1	6.0	6.6	6.2	7.2
6	7.9	8.9	8.8	9.8	12.0	12.7	12.4	12.2	12.7	14.4	13.8	13.3	13.5	13.3	13.5
7	5.4	5.5	5.2	6.7	7.5	7.1	7.9	7.6	7.8	9.0	9.2	9.5	8.8	9.2	10.1
8	8.5	7.6	8.2	7.8	8.8	9.4	9.7	9.7	10.4	10.3	9.9	8.7	9.4	8.6	8.7
9	6.3	5.8	6.6	7.4	7.4	9.6	9.0	8.1	11.6	10.0	9.1	10.6	10.2	11.0	8.0
Alberta	**8.8**	**9.1**	**9.1**	**9.3**	**11.5**	**11.9**	**11.9**	**11.8**	**12.2**	**13.2**	**12.7**	**12.4**	**12.5**	**12.3**	**12.3**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Fee-for-Service Claims Files, Alberta Health and Wellness.

Note: RHA boundaries are current as of April 2003.
Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A13 Induction Rates, Alberta, 1988 - 2002[1]

Year	Total hospital deliveries	Total Induction		Medical Induction		Surgical Induction		Combined Induction	
		Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]
88	41,983	5,040	12.0	3,450	8.2	1,057	2.5	533	1.3
89	43,272	7,085	16.4	4,259	9.8	1,462	3.4	1,364	3.2
90	43,024	7,306	17.0	4,487	10.4	1,314	3.1	1,505	3.5
91	42,676	7,269	17.0	4,556	10.7	1,354	3.2	1,359	3.2
92	41,727	6,964	16.7	4,232	10.1	1,275	3.1	1,457	3.5
93	40,043	8,484	21.2	4,356	10.9	2,390	6.0	1,738	4.3
94	39,554	8,642	21.8	4,698	11.9	2,256	5.7	1,688	4.3
95	38,462	8,414	21.9	5,179	13.5	1,596	4.1	1,639	4.3
96	37,277	8,486	22.8	5,751	15.4	1,094	2.9	1,641	4.4
97	36,304	8,572	23.6	6,421	17.7	648	1.8	1,503	4.1
98	37,419	9,000	24.1	6,957	18.6	560	1.5	1,513	4.0
99	37,841	9,589	25.3	7,310	19.3	606	1.6	1,673	4.4
00	36,647	9,495	25.9	7,314	20.0	548	1.5	1,633	4.5
01	37,180	10,044	27.0	7,433	20.0	595	1.6	2,016	5.4
02	38,146	7,378	19.3	4,468	11.7	940	2.5	1,970	5.2

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

Notes:
1. From April to December 2002, inductions performed on outpatient bases were not captured.
2. Rate = Cases / Total hospital deliveries * 100

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and

Table A14 Epidural Rate by Level of Facility, Alberta, 2000 - 2002

Hospitals	1998			1999			2000			2001			2002		
	Total Pregnancies	Epidural Analgesia in Labour	Rate[1]	Total Pregnancies	Epidural Analgesia in Labour	Rate[1]	Total Pregnancies	Epidural Analgesia in Labour	Rate[1]	Total Pregnancies	Epidural Analgesia in Labour	Rate[1]	Total Pregnancies	Epidural Analgesia in Labour	Rate[1]
Level III															
Foothills	4,253	2,254	53.0	4,344	2,378	54.7	4,157	2,330	56.1	4,107	2,250	54.8	4,300	2,278	53.0
Royal Alexandra/University of Alberta Hospital	4,498	1,564	34.8	4,408	1,580	35.8	4,017	1,730	43.1	4,067	1,903	46.8	4,321	2,029	47.0
Level III Total	**8,751**	**3,818**	**43.6**	**8,752**	**3,958**	**45.2**	**8,174**	**4,060**	**49.7**	**8,174**	**4,153**	**50.8**	**8,621**	**4,307**	**50.0**
Level II															
Rockyview General Hospital	4,011	1,678	41.8	4,185	1,948	46.5	4,115	2,190	53.2	4,244	2,380	56.1	4,458	2,520	56.5
Misericordia Hospital	2,549	739	29.0	2,620	750	28.6	2,657	787	29.6	2,607	877	33.6	2,410	893	37.1
Grey Nuns Hospital	3,479	1,676	48.2	3,553	2,037	57.3	3,560	2,218	62.3	3,800	2,507	66.0	4,027	2,620	65.1
Grande Prairie	1,061	7	0.7	1,104	2	0.2	1,055	48	4.5	1,142	44	3.9	1,210	69	5.7
Lethbridge Regional Hospital	1,589	184	11.6	1,601	365	22.8	1,572	431	27.4	1,595	505	31.7	1,646	546	33.2
Medicine Hat Regional Hospital	936	16	1.7	897	28	3.1	899	51	5.7	894	75	8.4	893	52	5.8
Red Deer General Hospital	1,702	102	6.0	1,750	67	3.8	1,699	113	6.7	1,699	161	9.5	1,819	162	8.9
Peter Lougheed Centre	3,814	1,309	34.3	3,770	1,284	34.1	4,033	1,647	40.8	4,000	1,773	44.3	4,148	1,649	39.8
Level II Total	**19,141**	**5,711**	**29.8**	**19,480**	**6,481**	**33.3**	**19,590**	**7,485**	**38.2**	**19,981**	**8,322**	**41.6**	**20,611**	**8,511**	**41.3**
Level I															
North	7,404	573	7.7	7,453	1,145	15.4	6,817	987	14.5	7,117	1,598	22.5	7,171	1,705	23.8
South	1,933	143	7.4	1,973	187	9.5	1,811	84	4.6	1,735	141	8.1	1,646	162	9.8
Level I Total	**9,337**	**716**	**7.7**	**9,426**	**1,332**	**14.1**	**8,628**	**1,071**	**12.4**	**8,852**	**1,739**	**19.6**	**8,817**	**1,867**	**21.2**
Alberta	**37,229**	**10,245**	**27.5**	**37,658**	**11,771**	**31.3**	**36,392**	**12,616**	**34.7**	**37,007**	**14,214**	**38.4**	**38,049**	**14,685**	**38.6**

Source: Statistics reported to the Reproductive Care Committee from Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness; validated with hospitals and Perinatal Audit Programs.

Note: 1. Rate = Number of women with epidural analgesia in labour / Total pregnancies x 100.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A15 Operative and Vaginal Breech Deliveries, Alberta, 1988 - 2002

Year	Total Hospital Deliveries	Cesarean Section		Forceps		Vacuum Extraction		Forceps and/or Vacuum	
		Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]
88	41,983	7,190	17.1	5,083	12.1	910	2.2	5,993	14.3
89	43,272	7,057	16.3	5,034	11.6	1,662	3.8	6,696	15.5
90	43,024	6,911	16.1	4,463	10.4	2,270	5.3	6,733	15.6
91	42,676	6,846	16.0	3,909	9.2	2,608	6.1	6,517	15.3
92	41,727	6,646	15.9	3,445	8.3	3,008	7.2	6,453	15.5
93	40,043	6,314	15.8	3,241	8.1	3,051	7.6	6,292	15.7
94	39,554	6,214	15.7	3,241	8.2	3,266	8.3	6,507	16.5
95	38,462	6,061	15.8	2,793	7.3	3,619	9.4	6,412	16.7
96	37,277	6,049	16.2	2,669	7.2	3,737	10.0	6,406	17.2
97	36,304	5,988	16.5	2,616	7.2	3,871	10.7	6,487	17.9
98	37,419	6,452	17.2	2,421	6.5	4,082	10.9	6,503	17.4
99	37,841	7,223	19.1	2,462	6.5	4,155	11.0	6,617	17.5
00	36,647	7,399	20.2	2,224	6.1	3,904	10.7	6,128	16.7
01	37,180	8,333	22.4	2,037	5.5	3,941	10.6	5,978	16.1
02	38,146	8,841	23.2	2,038	5.3	4,319	11.3	6,357	16.7

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

1. Rate = Cases / Total hospital deliveries x 100.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A16 Cesarean Sections (All Weights), Primary and Repeat Rates by Facility RHA, Alberta, 2001

Facility RHA	Total Mothers Delivered	Pregnancies Delivered by Cesarean Section		Primary Cesarean Section			Repeat Cesarean Section		Cesarean Section Perinatal & Neonatal Deaths		Trial of Labour		VBAC[1]		
		Total	Rate[2]	Cases	Rate[3]	% of total[4]	Cases	Rate[5]	Cases	Rate[6]	Attempted[7]	Attempted Rate[8]	Successful	Rate[9]	Success Rate[10]
1	2,009	431	21.5	272	13.5	63.1	159	7.9	3	7.0	93	38.3	84	34.6	90.3
2	1,202	195	16.2	130	10.8	66.7	65	5.4	2	10.3	38	40.9	28	30.1	73.7
3	12,901	3,105	24.1	2,133	16.5	68.7	972	7.5	26	8.4	654	45.6	463	32.3	70.8
4	3,178	636	20.0	393	12.4	61.8	243	7.6	4	6.3	117	34.2	99	28.9	84.6
5	630	186	29.5	110	17.5	59.1	76	12.1	0	0.0	14	16.3	10	11.6	71.4
6	12,312	2,767	22.5	1,857	15.1	67.1	910	7.4	29	10.5	520	39.4	409	31.0	78.7
7	1,820	316	17.4	202	11.1	63.9	114	6.3	1	3.2	73	40.1	68	37.4	93.2
8	1,786	393	22.0	232	13.0	59.0	161	9.0	4	10.2	45	22.1	43	21.1	95.6
9	1,169	259	22.2	166	14.2	64.1	93	8.0	3	11.6	61	45.9	40	30.1	65.6
Alberta	**37,007**	**8,288**	**22.4**	**5,495**	**14.8**	**66.3**	**2,793**	**7.5**	**72**	**8.7**	**1,615**	**40.0**	**1,244**	**30.8**	**77.0**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes:

1. VBAC = Vaginal Birth After Cesarean.
2. (Total Cesarean Sections / Total Mothers Delivered) x 100.
3. (Primary Cesarean Sections / Total Mothers Delivered) x 100.
4. (Primary Cesarean Sections / Total Pregnancies Delivered by Cesarean Section) x 100.
5. (Repeat Cesarean Sections / Total Mothers Delivered) x 100.
6. (Cesarean Section Deaths (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths)/Total Pregnancies Delivered by Cesarean Section) x 1000.
7. Failed VBAC's + Succcesful VBAC's.
8. (Attempted VBAC's / (Repeat Cesarean Sections + Successful VBAC's)) x 100.
9. (Successful VBAC's / (Repeat Cesarean Sections + Successful VBAC's)) x 100.
10. Successful VBAC's / Attempted VBAC's x 100.

Excludes out-of-hospital births.

RHA boundaries are current as of 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A17 Cesarean Sections (All Weights), Primary and Repeat Rates by Facility RHA, Alberta, 2002

Facility RHA	Total Mothers Delivered	Pregnancies Delivered by Cesarean Section		Primary Cesarean Section			Repeat Cesarean Section		Cesarean Section Perinatal & Neonatal Deaths		Trial of Labour		VBAC[1]		
		Total	Rate[2]	Cases	Rate[3]	% of total[4]	Cases	Rate[5]	Cases	Rate[6]	Attempted[7]	Attempted Rate[8]	Successful	Rate[9]	Success Rate[10]
1	2,033	412	20.3	261	12.8	63.3	151	7.4	3	7.3	70	34.0	55	26.7	78.6
2	1,182	207	17.5	139	11.8	67.1	68	5.8	3	14.5	43	43.4	31	31.3	72.1
3	13,421	3,269	24.4	2,206	16.4	67.5	1063	7.9	26	8.0	594	41.0	386	26.6	65.0
4	3,264	759	23.3	490	15.0	64.6	269	8.2	4	5.3	109	30.7	86	24.2	78.9
5	622	202	32.5	121	19.5	59.9	81	13.0	0	0.0	13	14.0	12	12.9	92.3
6	12,740	2,966	23.3	1,904	14.9	64.2	1062	8.3	24	8.1	479	33.4	371	25.9	77.5
7	1,780	339	19.0	229	12.9	67.6	110	6.2	2	5.9	58	37.2	46	29.5	79.3
8	1,814	412	22.7	257	14.2	62.4	155	8.5	2	4.9	45	23.1	40	20.5	88.9
9	1,193	227	19.0	139	11.7	61.2	88	7.4	3	13.2	57	44.2	41	31.8	71.9
Alberta	**38,049**	**8,793**	**23.1**	**5,746**	**15.1**	**65.3**	**3,047**	**8.0**	**67**	**7.6**	**1,468**	**35.7**	**1,068**	**26.0**	**72.8**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes:

1. VBAC = Vaginal Birth After Cesarean.
2. (Total Cesarean Sections / Total Mothers Delivered) x 100.
3. (Primary Cesarean Sections / Total Mothers Delivered) x 100.
4. (Primary Cesarean Sections / Total Pregnancies Delivered by Cesarean Section) x 100.
5. (Repeat Cesarean Sections / Total Mothers Delivered) x 100.
6. (Cesarean Section Deaths (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths)/Total Pregnancies Delivered by Cesarean Section) x 1000.
7. Failed VBAC's + Succcesful VBAC's.
8. (Attempted VBAC's / (Repeat Cesarean Sections + Successful VBAC's)) x 100.
9. (Successful VBAC's / (Repeat Cesarean Sections + Successful VBAC's)) x 100.
10. Successful VBAC's / Attempted VBAC's x 100.

Excludes out-of-hospital births.

RHA boundaries are current as of 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A18 Cesarean Section and Vaginal Birth After Cesarean (VBAC) Rates, Alberta, 1992 - 2002

Year	Cesarean Section Rate[1]	Repeat Cesarean Section Rate[2]	Trial of Labour Rate[3]	VBAC Rate[4]	VBAC Success Rate[5]
92	15.9	5.9	51.0	40.0	77.0
93	15.7	5.9	52.0	39.0	74.0
94	15.8	5.7	60.5	43.0	71.0
95	15.8	5.5	58.3	42.9	73.6
96	16.2	5.5	58.3	44.0	75.5
97	16.5	6.0	56.5	38.8	68.7
98	17.0	5.8	54.4	41.5	76.4
99	19.1	6.3	46.6	37.0	79.3
00	20.2	6.6	45.7	34.4	75.2
01	22.4	7.5	40.0	30.8	77.0
02	23.1	8.0	35.7	26.0	72.8

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals & Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

Notes:

1. Cesarean Sections / Total Mothers Delivered X 100.
2. (Repeat Cesarean Sections / Total Mothers Delivered) x 100.
3. Attempted Vaginal Births After Cesarean (VBAC's) / (Repeat Cesarean Sections + Successful VBAC's) X 100.
4. Successful VBAC's / (Repeat Cesarean Sections + Successful VBAC's) X 100.
5. Successful VBAC's / Attempted VBAC's X 100.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A19 Induction Rates by Residence RHA, Alberta, 2000 - 2002

Residence RHA[6]	Total hospital deliveries	Total Induction		Medical Induction		Surgical Induction		Combined Induction	
		Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]
2000									
1	1,890	417	22.1	384	20.3	24	1.3	9	0.5
2	1,197	191	16.0	175	14.6	5	0.4	11	0.9
3	12,620	3,303	26.2	2,353	18.6	242	1.9	708	5.6
4	3,415	850	24.9	631	18.5	63	1.8	156	4.6
5	1,100	291	26.5	249	22.6	14	1.3	28	2.5
6	10,546	3,008	28.5	2,250	21.3	143	1.4	615	5.8
7	2,230	532	23.9	453	20.3	27	1.2	52	2.3
8	1,796	451	25.1	437	24.3	7	0.4	7	0.4
9	1,089	274	25.2	239	21.9	11	1.0	24	2.2
Unknown	764	178	23.3	143	18.7	12	1.6	23	3.0
Alberta	**36,647**	**9,495**	**25.9**	**7,314**	**20.0**	**548**	**1.5**	**1,633**	**4.5**
2001									
1	1,916	484	25.3	454	23.7	19	1.0	11	0.6
2	1,219	197	16.2	185	15.2	7	0.6	5	0.4
3	12,694	3,565	28.1	2,413	19.0	291	2.3	861	6.8
4	3,372	820	24.3	639	19.0	44	1.3	137	4.1
5	1,083	289	26.7	233	21.5	29	2.7	27	2.5
6	10,793	3,246	30.1	2,248	20.8	135	1.3	863	8.0
7	2,348	560	23.9	458	19.5	37	1.6	65	2.8
8	1,887	451	23.9	431	22.8	8	0.4	12	0.6
9	1,174	274	23.3	247	21.0	14	1.2	13	1.1
Unknown	694	158	22.8	125	18.0	11	1.6	22	3.2
Alberta	**37,180**	**10,044**	**27.0**	**7,433**	**20.0**	**595**	**1.6**	**2,016**	**5.4**
2002									
1	1,939	157	8.1	124	6.4	32	1.7	1	0.1
2	1,207	68	5.6	53	4.4	10	0.8	5	0.4
3	13,145	2,840	21.6	1,526	11.6	432	3.3	882	6.7
4	3,525	633	18.0	416	11.8	80	2.3	137	3.9
5	1,193	196	16.4	118	9.9	44	3.7	34	2.8
6	11,043	2,558	23.2	1,519	13.8	249	2.3	790	7.2
7	2,346	342	14.6	240	10.2	38	1.6	64	2.7
8	1,881	226	12.0	189	10.0	27	1.4	10	0.5
9	1,264	236	18.7	201	15.9	16	1.3	19	1.5
Unknown	603	122	20.2	82	13.6	12	2.0	28	4.6
Alberta	**38,146**	**7,378**	**19.3**	**4,468**	**11.7**	**940**	**2.5**	**1,970**	**5.2**

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

Notes:
1. Rate = Cases / Total hospital deliveries x 100
RHA boundaries are current as of April 2003.
Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A20 Epidural Rate by Facility RHA, Alberta, 2000 - 2002

Facility RHA	2000			2001			2002		
	Total Pregnancies	Epidural Analgesia in Labour	Epidural Rate[1]	Total Pregnancies	Epidural Analgesia in Labour	Epidural Rate[1]	Total Pregnancies	Epidural Analgesia in Labour	Epidural Rate[1]
1	1,975	448	22.7	2,009	551	27.4	2,033	589	29.0
2	1,194	51	4.3	1,202	75	6.2	1,182	52	4.4
3	12,936	6,231	48.2	12,901	6,471	50.2	13,421	6,522	48.6
4	3,212	140	4.4	3,178	227	7.1	3,264	250	7.7
5	673	131	19.5	630	136	21.6	622	96	15.4
6	11,789	5,226	44.3	12,312	6,051	49.1	12,740	6,377	50.1
7	1,872	101	5.4	1,820	317	17.4	1,780	307	17.2
8	1,684	96	5.7	1,786	107	6.0	1,814	122	6.7
9	1,056	192	18.2	1,169	279	23.9	1,193	370	31.0
Alberta	**36,391**	**12,616**	**34.7**	**37,007**	**14,214**	**38.4**	**38,049**	**14,685**	**38.6**

Source: Statistics reported to the Reproductive Care Committee from Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness; validated with hospitals and Perinatal Audit Programs.

Notes: 1. Rate is per 100 pregnancies.

Data include 'out of province' cases.

RHA boundaries are current as of 2003.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A21 Methods of Delivery by Residence RHA, Alberta, 2000 - 2002

Residence RHA[1]	Total hospital deliveries	Cesarean Section		Forceps		Vacuum Extraction		Breech	
		Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]
2000									
1	1,890	366	19.4	66	3.5	155	8.2	15.0	0.8
2	1,197	204	17.0	25	2.1	103	8.6	10.0	0.8
3	12,620	2,582	20.5	872	6.9	1,619	12.8	94.0	0.7
4	3,415	727	21.3	163	4.8	121	3.5	27.0	0.8
5	1,100	231	21.0	47	4.3	149	13.5	6.0	0.5
6	10,546	2,109	20.0	821	7.8	1,137	10.8	53.0	0.5
7	2,230	460	20.6	102	4.6	260	11.7	3.0	0.1
8	1,796	357	19.9	23	1.3	163	9.1	0.0	0.0
9	1,089	212	19.5	60	5.5	127	11.7	6.0	0.6
Unknown	764	151	19.8	45	5.9	70	9.2	2.0	0.3
Alberta	**36,647**	**7,399**	**20.2**	**2,224**	**6.1**	**3,904**	**10.7**	**216**	**0.6**
2001									
1	1,916	403	21.0	75	3.9	207	10.8	21.0	1.1
2	1,219	219	18.0	13	1.1	98	8.0	5.0	0.4
3	12,694	3,013	23.7	739	5.8	1,622	12.8	65.0	0.5
4	3,372	737	21.9	125	3.7	136	4.0	17.0	0.5
5	1,083	285	26.3	26	2.4	151	13.9	1.0	0.1
6	10,793	2,320	21.5	823	7.6	1,103	10.2	32.0	0.3
7	2,348	498	21.2	109	4.6	258	11.0	3.0	0.1
8	1,887	424	22.5	30	1.6	163	8.6	4.0	0.2
9	1,174	268	22.8	56	4.8	158	13.5	1.0	0.1
Unknown	694	166	23.9	41	5.9	45	6.5	2.0	0.3
Alberta	**37,180**	**8,333**	**22.4**	**2,037**	**5.5**	**3,941**	**10.6**	**151**	**0.4**
2002									
1	1,939	397	20.5	66	3.4	213	11.0	10.0	0.5
2	1,207	228	18.9	14	1.2	88	7.3	9.0	0.7
3	13,145	3,194	24.3	659	5.0	1,928	14.7	86.0	0.7
4	3,525	874	24.8	166	4.7	121	3.4	12.0	0.3
5	1,193	333	27.9	52	4.4	144	12.1	4.0	0.3
6	11,043	2,463	22.3	781	7.1	1,146	10.4	53.0	0.5
7	2,346	538	22.9	128	5.5	256	10.9	10.0	0.4
8	1,881	430	22.9	18	1.0	155	8.2	7.0	0.4
9	1,264	255	20.2	124	9.8	210	16.6	0.0	0.0
Unknown	603	129	21.4	30	5.0	58	9.6	5.0	0.8
Alberta	**38,146**	**8,841**	**23.2**	**2,038**	**5.3**	**4,319**	**11.3**	**196**	**0.5**

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

Notes:

1. RHAs are for residence of mothers.
2. Rate = Cases / Total hospital deliveries x 100.

RHA boundaries are current as of April 2003.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A22 Selected Indicators by Maternal Age Group, Alberta, 2000 - 2002 Combined

Indicator	Maternal Age Group (years)						
	Total[1]	<20	20-24	25-29	30-34	35-39	>39
Smoking during pregnancy rate (per 100 live births)[2]	23.3	56.6	37.8	19.6	14.1	15.1	14.1
Alcohol consumption during pregnancy rate (per 100 live births)[2]	4.0	10.7	5.5	3.1	2.7	3.4	3.4
Small-for-gestational-age singleton rate (per 100 live singleton births)	7.8	9.5	8.5	7.4	7.1	7.8	9.7
Large for gestational age singleton rate (per 100 live singleton births)	12.3	10.3	11.0	12.3	13.2	13.4	13.0
Mean birth weight for singleton term births	3,491	3,446	3,470	3,498	3,510	3,493	3,463
Low birth weight rate (per 100 live births)	6.2	6.9	6.3	5.5	5.9	7.9	9.5
High birth weight rate (per 100 live births)	12.7	11.2	12.0	12.8	13.6	12.9	11.7
Preterm rate (per 100 live births)	8.5	8.8	8.3	7.8	8.4	9.9	11.3
Multiple birth rate (per 100 live births)	3.1	1.5	2.3	2.7	3.7	4.7	4.6
Midwife attendant rate (per 1,000 live births)	8.4	2.0	4.7	7.1	10.7	13.4	19.9
Stillbirths (per 1,000 total births)	6.4	8.5	5.9	5.1	6.3	8.0	15.9

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.

Notes: 1. Total includes all births for which maternal age is known.
2. Only live births with available information on maternal smoking or alcohol consumption are included.
Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A23 Mean Maternal Age at First Live Birth, Singleton

Year	First Live Birth	Singleton Live Birth	Multiple Live Birth	Stillbirth
88	25.7	27.5	28.5	26.9
89	25.7	27.7	28.8	28.3
90	25.8	27.8	29.0	27.9
91	25.8	27.8	28.8	27.5
92	26.0	28.0	28.9	27.7
93	26.2	28.1	28.9	28.2
94	26.3	28.2	29.3	28.8
95	26.4	28.2	29.4	28.7
96	26.6	28.5	29.3	29.0
97	26.8	28.6	30.3	28.9
98	26.7	28.5	30.4	28.7
99	26.7	28.6	30.6	29.1
00	26.9	28.7	30.5	28.9
01	27.0	28.8	30.6	29.8
02	27.0	28.8	30.5	29.5

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.

Note: Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A24 Mean Maternal Age and Percent of Births to Women Aged 35 and Older by Residence RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Mean Maternal Age (years)															
1	27.1	27.2	27.1	27.1	27.2	27.3	27.1	27.2	27.4	27.4	27.4	27.4	27.8	27.6	27.7
2	27.0	27.0	27.5	27.3	27.5	27.5	27.4	27.5	27.5	27.6	27.5	27.4	27.4	27.6	27.5
3	28.4	28.6	28.7	28.8	28.9	29.1	29.2	29.3	29.7	29.7	29.7	29.8	29.8	30.0	30.0
4	26.7	26.6	26.9	26.9	27.0	27.2	27.2	27.2	27.5	27.4	27.6	27.4	27.5	27.4	27.7
5	27.3	27.1	27.3	27.4	27.3	27.7	27.9	28.1	27.8	28.3	28.4	28.4	28.4	28.5	28.6
6	27.8	28.0	28.0	28.0	28.3	28.3	28.6	28.6	28.9	28.9	28.8	29.0	29.0	29.1	29.1
7	26.2	26.1	26.2	26.4	26.7	26.8	26.9	26.8	27.0	27.1	27.2	27.0	27.3	27.3	27.4
8	25.9	26.1	26.3	26.1	26.4	26.4	26.5	26.3	26.8	27.0	26.7	26.9	26.9	27.1	27.1
9	26.5	26.2	26.6	26.4	26.6	26.6	26.5	26.6	26.5	26.6	26.7	26.6	27.0	27.1	26.9
Unknown					26.2						23.1	29.2	28.3	24.4	28.6
Alberta	**27.6**	**27.7**	**27.8**	**27.9**	**28.0**	**28.1**	**28.2**	**28.3**	**28.5**	**28.6**	**28.6**	**28.7**	**28.8**	**28.8**	**28.9**
Percent of live births to women aged 35 and older															
1	5.9	7.5	6.5	7.3	8.3	8.8	7.6	9.3	9.2	11.2	9.3	9.7	11.4	10.8	11.4
2	4.9	4.3	6.1	6.6	5.3	8.2	7.0	7.3	8.6	8.3	8.9	8.3	7.9	8.9	10.0
3	8.6	9.2	10.4	11.8	12.0	12.8	14.0	14.8	16.8	17.4	17.1	18.5	18.6	18.7	18.2
4	5.0	5.2	5.7	6.6	6.4	6.9	7.1	7.2	9.2	9.6	9.5	9.8	10.0	10.0	10.5
5	6.3	6.0	5.8	6.7	6.3	8.6	7.9	9.5	8.0	11.9	11.1	11.0	12.9	12.2	12.2
6	7.7	8.3	9.3	9.6	10.1	10.7	12.0	12.3	13.1	13.9	14.1	15.6	15.3	15.2	15.3
7	4.6	4.7	5.2	5.7	6.5	6.6	7.8	6.9	8.3	8.1	8.7	8.1	11.0	9.4	9.7
8	4.6	4.5	5.2	4.8	6.1	5.3	5.9	6.2	7.8	7.6	8.0	8.6	9.2	9.0	8.5
9	6.8	5.9	6.6	6.4	7.7	8.5	6.6	8.2	7.3	9.2	8.5	6.8	9.6	9.6	7.9
Unknown												16.7	25.0		
Alberta	**7.1**	**7.6**	**8.4**	**9.1**	**9.5**	**10.2**	**10.9**	**11.4**	**12.7**	**13.4**	**13.3**	**14.2**	**14.7**	**14.6**	**14.5**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: RHA boundaries are current as of April 2003.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A25 Selected Maternal Pre-Pregnancy Conditions, Alberta, 2000 – 2002 Combined

Condition	Cases[1]	Rate[2]
Maternal weight of 91 kilograms or more	8,765	8.1
Pre-existing Diabetes	693	0.6
Heart disease	802	0.7
Pre-existing hypertension	831	0.8
Chronic renal disease	114	0.1

Sources: Northern and Central Alberta Perinatal Outreach Program
Southern Alberta Perinatal Outreach Program

Notes: 1. Cases = Number of women with the specified condition on the antenatal risk assessment portion of the Alberta Prenatal Record.

2. Rate is per 100 women with completed antenatal risk assessments on the Alberta Prenatal Record. There were 108,672 women with completed antenatal risk assessments for 2000 to 2002 combined.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A26 Selected Problems in Pregnancy, Alberta, 2000 – 2002 Combined

Condition	Cases[1]	Rate[2]
Prenatal bleeding		
At less than 20 weeks gestation only	5,529	5.1
At 20 weeks gestation or later only	2,826	2.6
Both before and after 20 weeks gestation	730	0.7
Pregnancy-induced hypertension	5,610	5.2
Gestational diabetes	3,600	3.3

Sources: Northern and Central Alberta Perinatal Outreach Program
Southern Alberta Perinatal Outreach Program

Notes: 1. Cases = Number of women with the specified condition on the antenatal risk assessment portion of the Alberta Prenatal Record.

2. Rate is per 100 women with completed antenatal risk assessments on the Alberta Prenatal Record. There were 108,672 women with completed antenatal risk assessments for 2000 to 2002 combined.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A27 Gestational Diabetes Rate by Maternal Age Group, Alberta, 2000 – 2002 Combined

Maternal Age Group (Years)	Cases[1]	N[2]	Rate[3]
<15	2	52	-
15-19	59	6,734	0.9
20-24	323	21,979	1.5
25-29	937	33,361	2.8
30-34	1,232	30,221	4.1
35-39	840	13,548	6.2
40-44	196	2,320	8.4
≥45	5	65	-
Unknown	6	392	
Alberta	**3,600**	**108,672**	**3.3**

Sources: Northern and Central Alberta Perinatal Outreach Program
Southern Alberta Perinatal Outreach Program

Notes: 1. Cases = Number of women with the specified condition on the antenatal risk assessment portion of the Alberta Prenatal Record.

2. N = Number of women with completed antenatal risk assesment on the Alberta Prenatal Record.

3. Rate is per 100 women in each age group with completed antenatal risk assessments on the Alberta Prenatal Record. A rate is not provided for the <15 and the≥45 age groups due to the low number of cases in these groups.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A28a Maternal Prenatal Behaviours, Alberta, 1997 - 2002

Year	Smoking During Pregnancy					Alcohol Consumption During Pregnancy					Street Drug Use During Pregnancy				
	N	No		Yes and/or Quit		N	No		Yes		N	No		Yes	
		Cases	%	Cases	%		Cases	%	Cases	%		Cases	%	Cases	%
97	35,192	25,805	73.3	9,387	26.7	34,806	32,993	94.8	1,813	5.2	34,652	34,149	98.5	503	1.5
98	35,967	26,338	73.2	9,629	26.8	35,510	33,954	95.6	1,556	4.4	35,332	34,755	98.4	577	1.6
99	36,399	27,038	74.3	9,361	25.7	35,950	34,420	95.7	1,530	4.3	35,630	35,091	98.5	539	1.5
00	35,644	26,867	75.4	8,777	24.6	35,152	33,744	96.0	1,408	4.0	34,353	33,682	98.0	671	2.0
01	36,404	27,913	76.7	8,491	23.3	35,883	34,477	96.1	1,406	3.9	35,116	34,443	98.1	673	1.9
02	37,315	29,060	77.9	8,255	22.1	36,723	35,250	96.0	1,473	4.0	35,901	35,127	97.8	774	2.2
Total	**216,921**	**163,021**	**75.2**	**53,900**	**24.8**	**214,024**	**204,838**	**95.7**	**9,186**	**4.3**	**210,984**	**207,247**	**98.2**	**3,737**	**1.8**

Table A28b Prenatal Class Attendance, Alberta, 1997 - 2002

Year	Prenatal Class Attendance[1]				
	N	No		Yes	
		Cases	%	Cases	%
97	13,172	4,826	36.6	8,346	63.4
98	13,499	4,894	36.3	8,605	63.7
99	13,640	4,915	36.0	8,725	64.0
00	13,182	5,010	38.0	8,172	62.0
01	13,169	4,945	37.6	8,224	62.4
02	13,405	4,955	37.0	8,450	63.0
Total	**80,067**	**29,545**	**36.9**	**50,522**	**63.1**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:

1. Prenatal class attendance data are for first births only.

Only live births with available information on the relevant maternal behaviour are included.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A29 Selected Indicators for Live Births, by Maternal Prenatal Behaviours, Alberta, 2000 - 2002 Combined

Indicator	Smoking During Pregnancy		Alcohol Consumption During Pregnancy		Street Drug Use During Pregnancy		Prenatal Class Attendance[1]	
	No	Yes and/or Quit	No	Yes	No	Yes	No	Yes
Mean Maternal Age (Years)	29.7	26.2	29.0	26.8	29.0	24.2	25.6	27.8
Mean Birth Weight (Grams)	3,423	3,273	3,392	3,325	3,393	3,189	3,242	3,404
Low Birth Weight Rate (per 100 Live Births)	5.4	8.2	6.0	8.2	6.0	12.3	2.5	1.6
Preterm Birth Rate (per 100 Live Births)	7.9	9.6	8.2	9.7	8.2	14.3	-	-

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: 1. Prenatal class attendance data are for first births only. Data are not provided for preterm births due to the relationship between week of gestation and opportunity to attend prenatal classes. Low birth weight rates by prenatal class attendance are for term births only to avoid this bias.

Only live births with available information on the relevant maternal behaviour are included.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A30 Maternal Prenatal Behaviours by Residence RHA, Alberta, 2000 - 2002 Combined

RHA	Smoking During Pregnancy			Alcohol Consumption During Pregnancy			Street Drug Use During Pregnancy			Prenatal Class Attendance[2]		
	Live Births[1]	Cases	%	Live Births[1]	Cases	%	Live Births[1]	Cases	%	Live Births[1]	Cases	%
1	5,777	1,212	**21.0**	5,698	370	**6.5**	5,608	53	**0.9**	1,951	1,342	**68.8**
2	3,617	1,025	**28.3**	2,945	215	**7.3**	2,786	62	**2.2**	1,370	884	**64.5**
3	38,942	6,603	**17.0**	38,596	1,036	**2.7**	37,973	543	**1.4**	14,806	9,913	**67.0**
4	10,278	3,301	**32.1**	10,227	881	**8.6**	9,939	285	**2.9**	3,579	2,038	**56.9**
5	2,693	652	**24.2**	2,677	88	**3.3**	2,598	32	**1.2**	863	506	**58.6**
6	32,361	7,389	**22.8**	32,099	879	**2.7**	31,351	737	**2.4**	12,023	7,214	**60.0**
7	6,736	2,433	**36.1**	6,610	310	**4.7**	6,444	199	**3.1**	2,106	1,262	**59.9**
8	5,504	1,813	**32.9**	5,472	281	**5.1**	5,345	120	**2.2**	1,958	1,133	**57.9**
9	3,442	1,092	**31.7**	3,421	227	**6.6**	3,314	87	**2.6**	1,098	552	**50.3**
Unknown	13	3	-	13	0	-	12	0	-	2	2	-
Alberta	**109,363**	**25,523**	**23.3**	**107,758**	**4,287**	**4.0**	**105,370**	**2,118**	**2.0**	**39,756**	**24,846**	**62.5**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: 1. Only live births with available information on the relevant maternal behaviour are included.

2. Prenatal class attendance data are for first births only.

Data include Alberta residents only.

RHA boundaries are current as of April 2003

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A31 Live Births and Percentage of Live Births by Maternal Age Group, and Age-Specific Fertility Rates, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)									
		<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44	Unknown
Live Births												
88	41,669	34	956	2,044	3,000	9,730	15,966	9,972	2,620	339	8	0
89	42,979	34	1,017	2,112	3,129	9,659	16,060	10,843	2,927	312	15	0
90	42,633	36	1,051	2,206	3,257	9,351	15,525	10,874	3,228	352	10	0
91	42,369	47	1,141	2,243	3,384	9,282	14,792	10,988	3,469	389	18	0
92	41,673	52	1,151	2,082	3,233	8,951	14,090	11,372	3,549	420	5	1
93	39,905	36	1,087	1,892	2,979	8,639	13,234	10,955	3,615	429	17	1
94	39,459	38	1,021	1,976	2,997	8,204	12,914	10,998	3,814	480	14	0
95	38,529	28	1,003	1,985	2,988	8,068	12,221	10,826	3,917	466	15	0
96	37,472	31	914	1,770	2,684	7,551	11,851	10,598	4,175	566	16	0
97	36,550	27	828	1,696	2,524	7,351	11,690	10,044	4,237	663	12	2
98	37,529	25	862	1,731	2,593	7,709	11,718	10,464	4,338	646	24	12
99	37,778	23	842	1,737	2,579	7,857	11,664	10,275	4,606	738	34	2
00	36,625	16	740	1,680	2,420	7,476	11,287	10,032	4,613	768	13	0
01	37,226	24	685	1,608	2,293	7,530	11,461	10,491	4,618	778	30	1
02	38,282	13	615	1,590	2,205	7,788	11,830	10,899	4,719	799	29	0
Percentage of Live Births												
88	100	0.1	2.3	4.9	7.2	23.4	38.3	23.9	6.3	0.8	0.0	0.0
89	100	0.1	2.4	4.9	7.3	22.5	37.4	25.2	6.8	0.7	0.0	0.0
90	100	0.1	2.5	5.2	7.6	21.9	36.4	25.5	7.6	0.8	0.0	0.0
91	100	0.1	2.7	5.3	8.0	21.9	34.9	25.9	8.2	0.9	0.0	0.0
92	100	0.1	2.8	5.0	7.8	21.5	33.8	27.3	8.5	1.0	0.0	0.0
93	100	0.1	2.7	4.7	7.5	21.6	33.2	27.5	9.1	1.1	0.0	0.0
94	100	0.1	2.6	5.0	7.6	20.8	32.7	27.9	9.7	1.2	0.0	0.0
95	100	0.1	2.6	5.2	7.8	20.9	31.7	28.1	10.2	1.2	0.0	0.0
96	100	0.1	2.4	4.7	7.2	20.2	31.6	28.3	11.1	1.5	0.0	0.0
97	100	0.1	2.3	4.6	6.9	20.1	32.0	27.5	11.6	1.8	0.0	0.0
98	100	0.1	2.3	4.6	6.9	20.5	31.2	27.9	11.6	1.7	0.1	0.0
99	100	0.1	2.2	4.6	6.8	20.8	30.9	27.2	12.2	2.0	0.1	0.0
00	100	0.0	2.0	4.6	6.6	20.4	30.8	27.4	12.6	2.1	0.0	0.0
01	100	0.1	1.8	4.3	6.2	20.2	30.8	28.2	12.4	2.1	0.1	0.0
02	100	0.0	1.6	4.2	5.8	20.3	30.9	28.5	12.3	2.1	0.1	0.0
Age-Specific Fertility Rate (per 1,000 Women in Each Group)[1,2]												
	TFR[3]											
88	1,806	0.4	18.0	53.2	32.8	91.1	124.2	82.1	26.7	4.2	0.1	
89	1,875	0.4	19.5	54.9	34.6	94.2	126.5	87.4	28.5	3.7	0.2	
90	1,861	0.4	20.0	58.9	36.2	92.4	124.2	85.4	29.9	3.9	0.2	
91	1,861	0.5	21.5	61.4	37.7	92.3	122.2	85.0	30.6	4.1	0.3	
92	1,843	0.5	21.2	57.7	35.8	90.4	120.9	87.0	30.0	4.4	0.1	
93	1,790	0.4	19.8	52.3	32.8	88.4	119.0	83.6	29.6	4.4	0.2	
94	1,805	0.4	18.4	54.1	32.6	86.1	121.8	85.0	30.6	4.7	0.2	
95	1,793	0.3	17.8	53.5	32.0	86.1	119.2	86.0	30.9	4.3	0.2	
96	1,757	0.3	15.7	47.3	28.1	81.3	117.0	87.3	32.5	5.0	0.2	
97	1,708	0.3	13.8	44.5	25.7	77.3	114.9	85.5	32.4	5.6	0.1	
98	1,729	0.2	13.8	43.7	25.4	78.4	112.5	91.3	32.6	5.2	0.2	
99	1,716	0.2	13.0	42.4	24.4	76.9	110.3	91.2	34.4	5.8	0.3	
00	1,660	0.1	11.3	39.3	22.4	72.1	106.4	90.3	34.8	5.9	0.1	
01	1,670	0.2	10.3	36.2	20.7	70.6	107.3	93.6	35.6	5.8	0.3	
02	1,686	0.1	9.1	34.9	19.5	70.5	107.8	96.1	37.4	5.8	0.2	

Table A32 Live Births by Facility and Residence RHA and General Fertility Rates by Residence RHA, Alberta, 1988 - 2002

	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Live Births by Facility RHA															
1	2,265	2,443	2,414	2,260	2,321	2,253	2,290	2,259	2,085	2,196	2,091	2,104	1,990	2,022	2,039
2	1,158	1,178	1,217	1,127	1,128	1,071	1,053	1,204	1,106	1,129	1,172	1,161	1,139	1,129	1,113
3	13,344	14,044	13,948	13,762	13,658	12,916	12,945	12,708	12,569	12,468	12,928	13,095	13,161	13,206	13,671
4	3,679	3,755	3,641	3,754	3,688	3,614	3,517	3,434	3,414	3,307	3,374	3,468	3,239	3,200	3,305
5	1,080	1,041	992	922	883	905	898	791	751	732	702	692	646	593	588
6	15,050	15,211	15,324	15,334	14,906	14,350	13,777	13,177	12,705	12,038	12,411	12,479	11,935	12,434	12,839
7	2,157	2,351	2,180	2,251	2,201	2,055	2,126	2,060	1,966	1,961	2,069	2,031	1,814	1,755	1,742
8	1,832	1,862	1,806	1,892	1,822	1,744	1,839	1,879	1,839	1,714	1,772	1,767	1,679	1,767	1,811
9	1,104	1,094	1,111	1,067	1,065	997	1,013	1,017	1,037	1,005	1,010	981	1,022	1,120	1,174
Unknown					1		1								
Alberta	**41,669**	**42,979**	**42,633**	**42,369**	**41,673**	**39,905**	**39,459**	**38,529**	**37,472**	**36,550**	**37,529**	**37,778**	**36,625**	**37,226**	**38,282**
Live Births by Residence RHA															
1	2,206	2,353	2,311	2,198	2,252	2,193	2,193	2,181	2,038	2,135	2,018	2,064	1,945	1,960	1,969
2	1,251	1,290	1,293	1,213	1,214	1,155	1,131	1,277	1,172	1,186	1,243	1,232	1,221	1,230	1,226
3	13,266	13,984	13,884	13,646	13,607	12,844	12,902	12,613	12,489	12,437	12,900	12,990	13,064	13,109	13,588
4	3,993	4,075	3,999	4,085	4,027	3,910	3,766	3,714	3,661	3,533	3,567	3,648	3,474	3,482	3,615
5	1,299	1,313	1,251	1,189	1,109	1,165	1,136	1,044	1,008	978	996	961	908	882	971
6	13,690	13,792	13,921	13,986	13,449	12,927	12,474	11,927	11,443	10,823	11,189	11,320	10,790	11,054	11,291
7	2,792	2,962	2,803	2,879	2,888	2,757	2,810	2,682	2,602	2,501	2,594	2,540	2,285	2,404	2,406
8	1,992	2,053	1,932	2,005	1,954	1,854	1,942	1,967	1,942	1,851	1,918	1,947	1,818	1,907	1,919
9	1,180	1,157	1,239	1,168	1,172	1,100	1,105	1,124	1,117	1,106	1,101	1,070	1,116	1,192	1,294
Unknown					1						3	6	4	6	3
Alberta	**41,669**	**42,979**	**42,633**	**42,369**	**41,673**	**39,905**	**39,459**	**38,529**	**37,472**	**36,550**	**37,529**	**37,778**	**36,625**	**37,226**	**38,282**
General Fertility Rate (per 1,000 Women Aged 15-49)[1] by Residence RHA															
1	64.0	68.3	66.2	62.4	63.4	61.5	61.1	60.3	56.1	58.5	55.0	55.6	52.0	52.3	52.6
2	60.5	62.3	61.8	57.7	57.7	54.6	52.4	58.4	52.6	52.5	53.8	52.0	50.9	50.2	49.3
3	57.9	60.0	58.1	56.1	55.2	51.7	51.4	49.5	48.1	46.5	46.5	45.4	44.7	43.9	44.3
4	64.3	65.1	62.8	63.1	61.2	58.8	56.3	54.9	53.6	51.1	50.2	50.2	47.1	46.5	47.5
5	53.2	54.1	51.7	48.8	45.0	47.1	45.2	41.5	39.9	38.6	38.8	37.3	35.1	33.8	36.9
6	58.9	58.9	58.4	57.9	55.1	52.4	50.9	49.1	47.2	44.5	45.5	45.1	42.6	43.0	43.2
7	70.3	73.8	69.2	70.5	69.7	66.0	66.3	62.7	60.7	57.8	59.0	57.2	51.4	53.7	53.3
8	67.4	69.4	64.1	66.1	64.2	61.4	64.0	63.3	61.2	57.5	58.2	57.9	53.7	55.9	55.5
9	78.1	75.5	80.7	74.8	74.5	70.1	71.0	72.6	71.5	67.3	64.5	61.4	62.7	65.1	67.2
Alberta	**60.6**	**61.9**	**60.3**	**59.1**	**57.5**	**54.6**	**53.7**	**52.2**	**50.3**	**48.3**	**48.5**	**47.7**	**45.6**	**45.6**	**46.0**

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. General fertility rate (GFR) refers to total number of live births per 1,000 women aged 15-49.

Populations are estimated at June 30, as viewed at December 31 of each year.

RHA boundaries are current as of 2001.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A33 Age-Specific Fertility Rates[1,2] and Total Fertility Rate by Residence RHA, Alberta, 2000 - 2002

Residence RHA	TFR[3]	Age Group (Years)									
		<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44
2000											
1	1,936		14.2	46.8	27.5	86.4	137.0	97.2	32.7	6.2	0.2
2	1,898		8.4	48.7	24.5	102.9	135.1	91.8	22.2	2.5	0.6
3	1,582	0.1	8.6	31.4	17.6	57.7	94.1	97.6	41.7	7.6	0.0
4	1,798	0.3	13.5	41.5	24.5	94.3	127.4	85.0	24.6	3.5	0.3
5	1,399		8.5	21.7	13.5	58.0	116.7	64.1	22.7	4.7	
6	1,548	0.2	9.1	35.4	19.6	61.4	99.8	89.1	34.2	5.4	0.1
7	1,909	0.4	18.9	59.8	34.8	108.5	128.5	76.6	29.7	3.8	
8	1,914		20.1	63.6	36.7	110.6	129.3	74.6	27.3	3.9	0.2
9	2,156		26.8	76.3	46.1	126.4	130.4	88.8	33.3	6.1	
Alberta	**1,660**	**0.1**	**11.3**	**39.3**	**22.4**	**72.1**	**106.4**	**90.3**	**34.8**	**5.9**	**0.1**
2001											
1	1,947	0.5	12.9	48.5	27.7	94.9	127.5	101.1	31.8	6.1	0.4
2	1,874	0.6	11.1	36.6	21.3	92.4	140.5	91.5	24.8	4.1	0.3
3	1,558	0.0	6.5	25.6	14.1	54.6	92.6	99.8	43.0	7.2	0.3
4	1,780	0.3	16.7	50.6	30.2	89.2	126.4	81.1	24.8	4.0	0.3
5	1,355		3.8	22.3	10.8	60.7	103.6	70.3	21.7	3.7	0.3
6	1,574	0.2	8.7	29.4	17.1	60.6	102.4	93.4	35.5	5.6	0.2
7	2,026	0.4	15.4	59.0	32.3	112.6	142.1	87.6	26.0	4.5	0.2
8	2,003	1.0	19.3	60.8	35.9	106.8	142.0	83.1	29.3	3.1	0.5
9	2,247		23.2	82.7	47.1	131.2	136.6	91.8	35.8	5.4	1.4
Alberta	**1,670**	**0.2**	**10.3**	**36.2**	**20.7**	**70.6**	**107.3**	**93.6**	**35.6**	**5.8**	**0.3**
2002											
1	1,954		12.6	44.6	25.6	90.6	141.9	90.6	35.8	6.1	0.4
2	1,832		10.5	38.7	22.4	96.2	130.9	83.6	28.7	4.5	0.3
3	1,578	0.1	6.2	26.0	14.2	54.8	91.5	103.5	44.1	7.1	0.4
4	1,821		13.0	44.7	25.3	91.1	127.7	87.6	28.0	4.5	0.1
5	1,483	0.5	3.6	21.8	11.0	56.9	121.9	78.5	23.1	5.2	
6	1,580	0.1	7.8	29.1	16.4	59.8	102.2	94.3	37.9	5.3	0.1
7	2,033	0.3	15.2	51.4	29.4	112.2	142.5	90.4	27.5	4.4	0.3
8	1,995	0.2	15.0	65.3	35.4	111.0	133.0	87.5	26.7	5.3	
	2,320		18.4	76.7	42.0	130.3	155.5	99.0	33.0	3.9	0.4
Alberta	**1,686**	**0.1**	**9.1**	**34.9**	**19.5**	**70.5**	**107.8**	**96.1**	**37.4**	**5.8**	**0.2**

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:
1. Age-specific fertility rate refers to number of live births per 1,000 women in a specific age group.
2. Age-specific fertility rates for age groups <15 and >44 are calculated based on female populations in the 10-14 and 45-49 age groups, respectively.
3. Total fertility rate (TFR) represents the average number of children a woman can expect to have in her lifetime, based on the fertility rates of a given year. TFR is equal to the sum of the age-specific fertility rates (aged 15 to 49).

Populations are estimated at June 30, as viewed at December 31 of each year.
RHA boundaries are current as of April 2003

Table A34 Total Births by Level of Hospital, Alberta, 1988 - 2002

Level of Hospital	Year 88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Level III															
Royal Alexandra	4,816	4,740	4,717	4,592	4,477	4,623	4,620	4,885	5,089	4,709	4,624	4,528	4,165	4,195	4,477
University of Alberta	3,026	2,803	2,999	2,909	2,906	2,798	2,521	1,223	4	10	6	10	3	1	0
Foothills	3,773	3,727	3,448	3,286	3,437	3,264	3,264	4,368	4,404	4,425	4,381	4,471	4,301	4,246	4,434
Total	**11,615**	**11,270**	**11,164**	**10,787**	**10,820**	**10,685**	**10,405**	**10,476**	**9,497**	**9,144**	**9,011**	**9,009**	**8,469**	**8,442**	**8,911**
Percent of Total Births	**27.3**	**25.9**	**25.7**	**25.0**	**25.6**	**26.3**	**25.9**	**26.9**	**24.9**	**24.7**	**23.6**	**23.3**	**22.6**	**22.2**	**22.9**
Level II															
Grande Prairie[2]	0	0	0	0	0	0	0	1,023	1,005	1,032	1,078	1,123	1,066	1,157	1,214
Charles Camsell	934	900	858	756	619	189	0	0	0	0	0	0	0	0	0
Misericordia	3,470	3,141	3,113	3,007	2,906	2,699	2,569	2,598	2,602	2,478	2,585	2,652	2,697	2,637	2,430
Edmonton General/Grey Nuns	1,924	2,551	2,727	3,095	2,877	2,944	2,843	3,148	3,576	3,378	3,529	3,599	3,614	3,834	4,062
Calgary General/Peter Lougheed	2,584	3,087	3,339	3,405	3,593	3,619	3,641	3,734	3,769	3,739	3,857	3,817	4,081	4,052	4,190
Holy Cross/Rockyview	3,965	4,384	4,665	4,648	4,439	4,092	4,056	3,950	3,796	3,763	4,051	4,233	4,164	4,302	4,502
Grace	2,503	2,118	1,975	1,991	1,652	1,480	1,478	87	0	0	0	0	0	0	0
Lethbridge	1,113	1,442	1,454	1,460	1,634	1,643	1,695	1,670	1,587	1,696	1,608	1,630	1,613	1,627	1,672
Medicine Hat	909	996	969	923	898	853	831	936	844	909	947	912	918	910	905
Red Deer	1,743	1,862	1,799	1,892	1,917	1,890	1,769	1,725	1,688	1,649	1,731	1,777	1,735	1,721	1,852
Total	**19,145**	**20,481**	**20,899**	**21,177**	**20,535**	**19,409**	**18,882**	**18,871**	**18,867**	**18,644**	**19,386**	**19,743**	**19,888**	**20,240**	**20,827**
Percent of Total Births	**45.1**	**47.1**	**48.1**	**49.1**	**48.5**	**47.7**	**46.9**	**48.4**	**49.5**	**50.4**	**50.8**	**51.2**	**53.2**	**53.3**	**53.4**
Level I															
St. Albert	700	686	641	708	805	874	964	1,019	1,180	1,246	1,415	1,536	1,358	1,587	1,708
Fort McMurray	737	696	766	659	704	684	635	623	655	616	650	623	636	723	743
Other - North	7,280	7,530	7,125	7,286	6,941	6,683	6,958	5,540	5,527	5,120	5,377	5,318	4,865	4,828	4,751
Total North	8,717	8,912	8,532	8,653	8,450	8,241	8,557	7,182	7,362	6,982	7,442	7,477	6,859	7,138	7,202
Total South	2,805	2,514	2,640	2,337	2,282	2,086	2,111	2,106	2,036	1,858	1,934	1,974	1,815	1,735	1,647
Total	**11,522**	**11,426**	**11,172**	**10,990**	**10,732**	**10,327**	**10,668**	**9,288**	**9,398**	**8,840**	**9,376**	**9,451**	**8,674**	**8,873**	**8,849**
Percent of Total Births	**27.1**	**26.3**	**25.7**	**25.5**	**25.4**	**25.4**	**26.5**	**23.8**	**24.7**	**23.9**	**24.6**	**24.5**	**23.2**	**23.4**	**22.7**
Out-of-Hospital Births[1]	204	269	228	200	236	232	286	344	326	346	376	391	364	408	400
	0.5	**0.6**	**0.5**	**0.5**	**0.6**	**0.6**	**0.7**	**0.9**	**0.9**	**0.9**	**1.0**	**1.0**	**1.0**	**1.1**	**1.0**
Alberta	**42,486**	**43,446**	**43,463**	**43,154**	**42,323**	**40,653**	**40,241**	**38,979**	**38,088**	**36,974**	**38,149**	**38,594**	**37,395**	**37,963**	**38,987**

Sources: Statistics reported to the Reproductive Care Committee by Health Records departments of hospitals.
Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellne
Vital Statistics, Birth File, Department of Government Services, January 2004 relea

Note: 1. Out of hospital data are from Vital Statistics.

Note: 2. Grande Prairie was a Level I hospital until 1995. Births prior to 1995 for Grande Prairie are included in Level I North data.
Data include 'out of province' case
Data may differ from previously published data due to differences in definitions and dates of data extract

Table A35 Live Births by Birth Weight Categories, Alberta, 1988 - 2002

Year	Birth Weight (Grams)					
	<500	<1000	<1500	<2500	≥4000	≥4500
Live Births						
88	0	153	383	2,413	4,440	583
89	0	192	399	2,527	4,703	700
90	42	178	389	2,513	4,745	712
91	27	158	365	2,440	4,656	651
92	29	176	382	2,434	4,766	691
93	32	151	314	2,263	4,605	719
94	41	178	364	2,227	4,493	640
95	44	189	371	2,308	4,372	646
96	35	184	388	2,280	4,364	697
97	34	159	368	2,251	4,176	635
98	27	163	366	2,327	4,633	642
99	31	184	375	2,243	4,764	766
00	47	213	423	2,250	4,713	778
01	43	194	410	2,265	4,796	796
02	63	225	446	2,483	4,770	740
Percentage of Live Births						
88	0.00	0.37	0.92	5.79	10.66	1.40
89	0.00	0.45	0.93	5.88	10.94	1.63
90	0.10	0.42	0.91	5.89	11.13	1.67
91	0.06	0.37	0.86	5.76	10.99	1.54
92	0.07	0.42	0.92	5.84	11.44	1.66
93	0.08	0.38	0.79	5.67	11.54	1.80
94	0.10	0.45	0.92	5.64	11.39	1.62
95	0.11	0.49	0.96	5.99	11.35	1.68
96	0.09	0.49	1.04	6.08	11.65	1.86
97	0.09	0.44	1.01	6.16	11.43	1.74
98	0.07	0.43	0.98	6.20	12.35	1.71
99	0.08	0.49	0.99	5.94	12.61	2.03
00	0.13	0.58	1.15	6.14	12.87	2.12
01	0.12	0.52	1.10	6.08	12.88	2.14
02	0.16	0.59	1.17	6.49	12.46	1.93

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A36 Small-for-Gestational-Age Births and Rates by Plurality and Term/Preterm, Alberta, 1988 - 2002

Year	Singleton Small-for-Gestational-Age (SGA) Births[1]						Multiple Small-for-Gestational-Age (SGA) Births[1]					
	Preterm			Term			Preterm			Term		
	SGA Cases	Live Births	SGA Rate[2]	SGA Cases	Live Births	SGA Rate[2]	SGA Cases	Live Births	SGA Rate[2]	SGA Cases	Live Births	SGA Rate[2]
88	263	2,406	10.9	4,042	38,374	10.5	37	451	8.2	44	378	11.6
89	241	2,402	10.0	4,205	39,606	10.6	41	428	9.6	68	492	13.8
90	264	2,487	10.6	4,087	39,218	10.4	61	469	13.0	31	409	7.6
91	299	2,391	12.5	3,967	39,032	10.2	38	420	9.0	51	459	11.1
92	224	2,357	9.5	3,742	38,310	9.8	46	462	10.0	44	499	8.8
93	243	2,262	10.7	3,572	36,732	9.7	37	385	9.6	37	483	7.7
94	228	2,252	10.1	3,429	36,305	9.4	43	422	10.2	47	453	10.4
95	251	2,211	11.4	3,469	35,384	9.8	52	495	10.5	36	405	8.9
96	235	2,258	10.4	3,124	34,317	9.1	61	511	11.9	32	376	8.5
97	235	2,141	11.0	3,118	33,444	9.3	42	514	8.2	25	425	5.9
98	238	2,272	10.5	3,067	34,217	9.0	60	543	11.0	35	472	7.4
99	244	2,389	10.2	2,787	34,324	8.1	42	547	7.7	39	493	7.9
00	227	2,478	9.2	2,579	33,009	7.8	58	620	9.4	38	487	7.8
01	239	2,484	9.6	2,580	33,572	7.7	56	624	9.0	35	525	6.7
02	245	2,597	9.4	2,556	34,444	7.4	66	698	9.5	41	527	7.8

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: 1. Small-for-gestational-age births with unknown gestation or gestation greater than 42 weeks are excluded from these columns.

2. Small-for-gestational-age rate = SGA Cases/Live Births, in a given category.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A37 Singleton Small-for-Gestational-Age Live Births and Rates by Age Group of Mother, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Singleton Small-for-Gestational-Age Live Births								
88	**4,310**	378	1,170	1,622	888	218	34	0
89	**4,454**	369	1,117	1,660	1,019	253	36	0
90	**4,353**	359	1,040	1,538	1,076	303	37	0
91	**4,275**	421	1,002	1,477	1,030	309	36	0
92	**3,973**	360	942	1,339	987	304	41	0
93	**3,818**	335	910	1,222	992	318	41	0
94	**3,659**	353	874	1,134	923	328	47	0
95	**3,723**	352	859	1,133	941	383	55	0
96	**3,360**	295	741	994	904	372	54	0
97	**3,355**	302	743	1,016	836	380	78	0
98	**3,307**	294	720	1,005	827	392	67	2
99	**3,034**	237	706	899	722	393	75	2
00	**2,812**	239	622	847	702	345	57	0
01	**2,824**	216	646	817	725	336	84	0
02	**2,803**	196	628	826	718	353	82	0
Singleton Small-for-Gestational-Age Rate (per 100 live singleton births)								
88	**10.6**	12.6	12.2	10.4	9.1	8.5	10.0	
89	**10.6**	11.8	11.7	10.6	9.6	8.9	11.3	
90	**10.4**	11.0	11.3	10.1	10.2	9.6	10.4	
91	**10.3**	12.4	11.0	10.2	9.6	9.1	9.0	
92	**9.8**	11.1	10.7	9.7	8.9	8.8	9.8	
93	**9.8**	11.2	10.8	9.4	9.3	9.0	9.4	
94	**9.5**	11.8	10.8	9.0	8.6	8.8	9.6	
95	**9.9**	11.8	10.9	9.5	8.9	10.1	11.6	
96	**9.2**	11.0	10.0	8.6	8.8	9.2	9.5	
97	**9.4**	12.0	10.3	8.9	8.6	9.3	12.0	
98	**9.1**	11.4	9.5	8.8	8.2	9.4	10.4	
99	**8.3**	9.2	9.1	7.9	7.3	8.9	10.1	
00	**7.9**	10.0	8.5	7.7	7.2	7.8	7.7	
01	**7.8**	9.5	8.8	7.3	7.2	7.6	10.9	
02	**7.6**	9.0	8.3	7.2	6.9	7.9	10.3	

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A38 Low Birth Weight (<2500 grams) Births and Rates by Plurality and Term/Preterm, Alberta, 1988 - 2002

Year	Singleton Low Birth Weight (LBW) Births[1]						Multiple Low Birth Weight (LBW) Births[1]					
	Preterm			Term			Preterm			Term		
	LBW Cases	Live Births	LBW Rate[2]	LBW Cases	Live Births	LBW Rate[2]	LBW Cases	Live Births	LBW Rate[2]	Cases	Live Births	LBW Rate[2]
88	1,221	2,406	50.7	760	38,374	2.0	343	451	76.1	89	378	23.5
89	1,257	2,402	52.3	791	39,606	2.0	330	428	77.1	148	492	30.1
90	1,239	2,487	49.8	811	39,218	2.1	376	469	80.2	86	409	21.0
91	1,192	2,391	49.9	803	39,032	2.1	326	420	77.6	119	459	25.9
92	1,172	2,357	49.7	764	38,310	2.0	375	462	81.2	120	499	24.0
93	1,131	2,262	50.0	731	36,732	2.0	297	385	77.1	104	483	21.5
94	1,145	2,252	50.8	649	36,305	1.8	318	422	75.4	115	453	25.4
95	1,162	2,211	52.6	667	35,384	1.9	395	495	79.8	84	405	20.7
96	1,145	2,258	50.7	650	34,317	1.9	392	511	76.7	93	376	24.7
97	1,102	2,141	51.5	634	33,444	1.9	421	514	81.9	94	425	22.1
98	1,134	2,272	49.9	651	34,217	1.9	444	543	81.8	99	472	21.0
99	1,187	2,389	49.7	543	34,324	1.6	418	547	76.4	95	493	19.3
00	1,150	2,478	46.4	526	33,009	1.6	469	620	75.6	104	487	21.4
01	1,154	2,484	46.5	528	33,572	1.6	478	624	76.6	103	525	19.6
02	1,232	2,597	47.4	570	34,444	1.7	544	698	77.9	138	527	26.2

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: 1. Low birth weight births with unknown gestation or gestation greater than 42 weeks are excluded from these columns.

2. Low birth weight rate = LBW Cases/Live Births, in a given category.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A39 Low Birth Weight (<2500 grams) Live Births and Rates by Age Group of Mother, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Low Birth Weight Live Births								
88	2,413	202	587	858	562	179	25	0
89	2,527	234	552	932	590	190	29	0
90	2,513	216	566	851	655	200	25	0
91	2,440	236	525	789	657	208	27	0
92	2,434	195	543	815	642	212	27	0
93	2,263	214	499	693	597	232	27	1
94	2,227	202	461	668	611	252	33	0
95	2,308	194	499	687	596	296	36	0
96	2,280	198	494	624	630	295	39	0
97	2,251	192	424	673	588	312	62	0
98	2,328	206	449	650	622	340	59	2
99	2,243	152	451	614	651	317	57	1
00	2,250	170	447	605	599	352	77	0
01	2,265	159	458	605	583	384	75	1
02	2,484	154	537	677	679	360	77	0
Low Birth Weight Rate (per 100 Live Births)								
88	5.8	6.7	6.0	5.4	5.6	6.8	7.2	
89	5.9	7.4	5.7	5.8	5.4	6.5	8.9	
90	5.9	6.6	6.1	5.5	6.0	6.2	6.9	
91	5.8	6.9	5.7	5.3	6.0	5.9	6.6	
92	5.8	5.9	6.1	5.8	5.6	6.0	6.4	
93	5.7	7.1	5.8	5.2	5.4	6.4	6.1	
94	5.6	6.7	5.6	5.2	5.6	6.6	6.7	
95	6.0	6.4	6.2	5.6	5.5	7.6	7.5	
96	6.1	7.3	6.5	5.3	5.9	7.1	6.7	
97	6.2	7.5	5.8	5.8	5.9	7.4	9.2	
98	6.2	7.9	5.8	5.5	5.9	7.8	8.8	
99	5.9	5.8	5.7	5.3	6.3	6.9	7.4	
00	6.1	7.0	6.0	5.4	6.0	7.6	9.9	
01	6.1	6.9	6.1	5.3	5.6	8.3	9.3	
02	6.5	6.9	6.9	5.7	6.2	7.6	9.3	

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A40 Singleton Small-for-Gestational-Age Births by Residence and Facility RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	198	215	218	198	180	222	204	181	158	164	151	149	117	137	115
2	126	138	147	140	137	125	115	136	102	121	134	105	105	105	98
3	1508	1625	1582	1555	1490	1420	1317	1368	1295	1264	1294	1133	1073	1112	1113
4	414	391	409	388	369	359	353	367	334	306	313	260	251	224	261
5	111	129	100	113	103	88	90	73	68	66	73	74	66	65	76
6	1395	1376	1360	1314	1168	1110	1066	1102	942	926	924	887	830	827	772
7	267	303	265	276	242	255	261	223	199	244	193	182	143	162	149
8	197	185	178	191	164	159	158	190	182	159	139	141	146	121	140
9	94	92	94	100	120	80	95	83	80	105	86	102	80	71	78
Unknown												1	1		1
Alberta	**4,310**	**4,454**	**4,353**	**4,275**	**3,973**	**3,818**	**3,659**	**3,723**	**3,360**	**3,355**	**3,307**	**3,034**	**2,812**	**2,824**	**2,803**
Facility															
1	207	220	237	206	183	217	212	188	162	167	161	151	121	133	121
2	114	126	132	134	128	126	110	125	95	112	127	97	99	97	85
3	1,515	1,643	1,596	1,566	1,501	1,431	1,330	1,384	1,306	1,275	1,296	1142	1075	1136	1132
4	390	365	372	349	346	339	316	334	311	279	289	250	231	199	230
5	88	95	81	85	79	72	66	58	46	53	45	53	48	42	45
6	1,533	1,523	1,492	1,442	1,302	1,250	1,181	1,205	1,051	1,045	1,036	986	918	925	904
7	193	228	201	212	178	165	210	174	152	180	154	143	122	115	96
8	182	168	162	181	145	145	150	177	165	147	120	118	127	112	119
9	88	86	80	100	111	73	83	78	72	97	79	94	71	65	71
Unknown							1								
Alberta	**4,310**	**4,454**	**4,353**	**4,275**	**3,973**	**3,818**	**3,659**	**3,723**	**3,360**	**3,355**	**3,307**	**3,034**	**2,812**	**2,824**	**2,803**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A41 Singleton Small-for-Gestational-Age, Singleton Large-for-Gestational-Age, Preterm and Multiple Births, and Rates, by Residence and Facility RHA, Alberta, 2000 - 2002 Combined

RHA	Total Singleton Live Births	Small for Gestational Age[1]		Large for Gestational Age[1]		Total Live Births	Preterm[2]		Multiple Birth[2]	
		Cases	Rate	Cases	Rate		Cases	Rate	Cases	Rate
Residence										
1	5,671	369	6.5	778	13.7	5,874	426	7.3	203	3.5
2	3,546	308	8.7	426	12.0	3,677	260	7.1	131	3.6
3	38,447	3,298	8.6	3,962	10.3	39,761	3,499	8.8	1,314	3.3
4	10,237	736	7.2	1,461	14.3	10,571	834	7.9	334	3.2
5	2,674	207	7.7	331	12.4	2,761	250	9.1	87	3.2
6	32,153	2,429	7.6	4,035	12.5	33,135	3,028	9.1	982	3.0
7	6,910	454	6.6	1,050	15.2	7,095	585	8.2	185	2.6
8	5,502	407	7.4	789	14.3	5,644	376	6.7	142	2.5
9	3,499	229	6.5	537	15.3	3,602	243	6.7	103	2.9
Unknown	13	2		-		13	-			
Alberta	**108,652**	**8,439**	**7.8**	**13,369**	**12.3**	**112,133**	**9,501**	**8.5**	**3,481**	**3.1**
Facility										
1	5,860	375	6.4	822	14.0	6,051	397	6.6	191	3.2
2	3,290	281	8.5	390	11.9	3,381	183	5.4	91	2.7
3	38,610	3,343	8.7	3,962	10.3	40,038	3,730	9.3	1,428	3.6
4	9,519	660	6.9	1,356	14.2	9,744	542	5.6	225	2.3
5	1,819	135	7.4	241	13.2	1,827	51	2.8	8	0.4
6	35,892	2,747	7.7	4,572	12.7	37,208	4,022	10.8	1,316	3.5
7	5,272	333	6.3	771	14.6	5,311	191	3.6	39	0.7
8	5,135	358	7.0	757	14.7	5,257	247	4.7	122	2.3
9	3,255	207	6.4	498	15.3	3,316	138	4.2	61	1.8
Unknown	0	0				0				
Alberta	**108,652**	**8,439**	**7.8**	**13,369**	**12.3**	**112,133**	**9,501**	**8.5**	**3,481**	**3.1**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note:
1. Small- and large-for-gestational-age rates are calculated per 100 live singleton births.
2. Preterm and multiple birth rates are calculated per 100 live births.

RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A42 Low Birth Weight (<2500 grams) Births by Residence and Facility RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	112	121	152	121	113	116	126	123	114	111	95	128	118	114	99
2	62	64	60	61	54	62	43	77	66	61	72	75	58	73	82
3	838	860	930	845	817	789	760	829	817	846	891	806	861	873	992
4	202	256	214	215	217	216	211	234	238	215	210	199	184	215	229
5	71	81	63	68	62	67	50	54	52	54	49	49	56	57	65
6	799	817	789	813	834	693	723	717	708	675	711	670	676	669	722
7	159	152	142	169	163	163	160	137	132	133	138	148	136	120	137
8	106	118	97	99	111	95	97	97	105	92	105	100	103	91	93
9	64	58	66	49	63	62	57	40	48	64	56	68	57	53	65
Unknown											1		1		
Alberta	**2,413**	**2,527**	**2,513**	**2,440**	**2,434**	**2,263**	**2,227**	**2,308**	**2,280**	**2,251**	**2,328**	**2,243**	**2,250**	**2,265**	**2,484**
Facility															
1	105	122	151	120	105	106	127	118	112	105	101	118	106	98	91
2	54	44	37	45	41	53	35	68	44	50	52	53	41	52	50
3	861	893	991	886	856	835	792	877	858	892	930	866	929	949	1070
4	152	186	145	151	148	146	145	145	165	136	139	134	125	118	140
5	21	24	20	23	26	25	21	19	19	15	13	14	11	14	15
6	1,040	1,082	1,017	1,017	1,084	950	936	926	948	912	956	903	879	925	983
7	66	74	66	88	67	57	70	53	43	47	43	48	52	38	36
8	67	61	54	70	64	51	66	77	59	56	56	62	70	46	65
9	47	41	42	40	43	40	35	27	32	38	38	45	37	25	34
Alberta	**2,413**	**2,527**	**2,513**	**2,440**	**2,434**	**2,263**	**2,227**	**2,308**	**2,280**	**2,251**	**2,328**	**2,243**	**2,250**	**2,265**	**2,484**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A43 Mean Birth Weight for Selected Categories of Live Births, Alberta, 1988 to 2002

Year	All Live Births	Preterm Births	Term Births	Singleton Births	Multiple Births
88	3,355	2,343	3,429	3,375	2,387
89	3,358	2,314	3,431	3,379	2,394
90	3,358	2,325	3,435	3,379	2,358
91	3,361	2,345	3,433	3,381	2,415
92	3,367	2,332	3,442	3,389	2,429
93	3,374	2,350	3,447	3,394	2,479
94	3,374	2,334	3,449	3,396	2,413
95	3,362	2,286	3,443	3,386	2,353
96	3,370	2,320	3,453	3,395	2,342
97	3,368	2,303	3,452	3,395	2,362
98	3,377	2,328	3,462	3,405	2,363
99	3,388	2,333	3,477	3,416	2,404
00	3,386	2,361	3,481	3,418	2,357
01	3,390	2,365	3,483	3,422	2,386
02	3,380	2,339	3,478	3,415	2,329

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A44 Large-for-Gestational-Age Births and Rates by Plurality and Term/Preterm, Alberta, 1988 - 2002

Year	Singleton Large-for-Gestational-Age (LGA) Births[1]						Multiple Large-for-Gestational-Age (LGA) Births[1]					
	Preterm			Term			Preterm			Term		
	LGA Cases	Live Births	LGA Rate[2]	LGA Cases	Live Births	LGA Rate[2]	LGA Cases	Live Births	LGA Rate[2]	Cases	Live Births	LGA Rate[2]
88	279	2,406	11.6	3,696	38,374	9.6	45	451	10.0	31	378	8.2
89	203	2,402	8.5	3,800	39,606	9.6	52	428	12.1	45	492	9.1
90	239	2,487	9.6	3,876	39,218	9.9	45	469	9.6	43	409	10.5
91	252	2,391	10.5	3,778	39,032	9.7	45	420	10.7	30	459	6.5
92	246	2,357	10.4	4,095	38,310	10.7	38	462	8.2	71	499	14.2
93	213	2,262	9.4	3,744	36,732	10.2	42	385	10.9	52	483	10.8
94	231	2,252	10.3	3,699	36,305	10.2	41	422	9.7	39	453	8.6
95	188	2,211	8.5	3,686	35,384	10.4	33	495	6.7	44	405	10.9
96	217	2,258	9.6	3,796	34,317	11.1	66	511	12.9	49	376	13.0
97	192	2,141	9.0	3,552	33,444	10.6	44	514	8.6	40	425	9.4
98	252	2,272	11.1	3,911	34,217	11.4	43	543	7.9	55	472	11.7
99	244	2,389	10.2	4,025	34,324	11.7	72	547	13.2	59	493	12.0
00	316	2,478	12.8	4,064	33,009	12.3	70	620	11.3	65	487	13.3
01	299	2,484	12.0	4,194	33,572	12.5	76	624	12.2	63	525	12.0
02	312	2,597	12.0	4,173	34,444	12.1	81	698	11.6	66	527	12.5

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: 1. Large-for-gestational-age births with unknown gestation or gestation greater than 42 weeks are excluded from these columns.

2. Large-for-gestational-age rate = LGA Cases/Live Births, in a given category.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A45 Singleton Large-for-Gestational-Age Rates by Maternal Age Group, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Singleton Large-for-Gestational-Age Live Births								
88	3,980	246	803	1,472	1,065	341	53	0
89	4,008	262	793	1,431	1,145	339	38	0
90	4,122	262	820	1,449	1,161	376	54	0
91	4,039	277	823	1,341	1,145	401	52	0
92	4,349	311	820	1,433	1,284	431	69	1
93	3,963	277	783	1,255	1,178	410	60	0
94	3,934	269	750	1,273	1,146	437	59	0
95	3,878	256	676	1,260	1,178	440	68	0
96	4,013	237	728	1,252	1,217	500	79	0
97	3,747	219	666	1,167	1,143	479	72	1
98	4,169	240	711	1,359	1,233	530	93	3
99	4,277	222	787	1,352	1,263	554	99	0
00	4,383	240	789	1,364	1,293	581	116	0
01	4,498	249	814	1,416	1,327	610	81	1
02	4,488	217	840	1,368	1,371	590	102	0
Singleton Large-for-Gestational-Age Rate (per 100 Live Singleton Births)								
88	9.7	8.2	8.4	9.4	10.9	13.4	15.6	
89	9.5	8.4	8.3	9.1	10.8	12.0	11.9	
90	9.9	8.0	8.9	9.5	11.0	11.9	15.2	
91	9.7	8.2	9.0	9.3	10.7	11.8	13.0	
92	10.7	9.6	9.3	10.4	11.6	12.4	16.5	
93	10.2	9.3	9.3	9.7	11.0	11.7	13.8	
94	10.2	9.0	9.3	10.1	10.7	11.8	12.0	
95	10.3	8.6	8.6	10.6	11.2	11.6	14.3	
96	11.0	8.9	9.8	10.8	11.8	12.3	13.9	
97	10.5	8.7	9.2	10.2	11.7	11.8	11.1	
98	11.4	9.3	9.4	11.9	12.2	12.7	14.5	
99	11.6	8.6	10.2	11.9	12.8	12.5	13.3	
00	12.3	10.0	10.8	12.4	13.3	13.2	15.6	
01	12.5	10.9	11.1	12.7	13.1	13.9	10.5	
02	12.1	9.9	11.1	11.9	13.1	13.1	12.8	

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A46 High Birth Weight (≥4,000 grams) Rate by Maternal Age Group, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
High Birth Weight Live Births								
88	4,440	257	967	1,687	1,159	329	41	0
89	4,703	298	917	1,771	1,315	369	33	0
90	4,745	302	959	1,694	1,330	401	59	0
91	4,656	347	940	1,581	1,290	440	58	0
92	4,766	340	945	1,612	1,353	459	57	0
93	4,605	315	919	1,504	1,365	439	63	0
94	4,493	310	844	1,480	1,342	462	55	0
95	4,372	280	807	1,448	1,305	472	60	0
96	4,364	255	821	1,401	1,306	503	78	0
97	4,176	249	765	1,353	1,228	507	74	0
98	4,633	274	819	1,518	1,373	554	93	2
99	4,764	237	925	1,530	1,363	599	110	0
00	4,713	247	894	1,461	1,409	602	100	0
01	4,796	291	914	1,494	1,417	600	80	0
02	4,770	241	927	1,469	1,433	598	102	0
High Birth Weight Rate (per 100 Live Births)								
88	10.7	8.5	9.9	10.6	11.6	12.6	11.8	
89	10.9	9.4	9.5	11.0	12.1	12.6	10.1	
90	11.1	9.2	10.3	10.9	12.2	12.4	16.3	
91	11.0	10.1	10.1	10.7	11.7	12.7	14.3	
92	11.4	10.4	10.6	11.4	11.9	12.9	13.4	
93	11.5	10.4	10.6	11.4	12.5	12.1	14.1	
94	11.4	10.2	10.3	11.5	12.2	12.1	11.1	
95	11.3	9.3	10.0	11.8	12.1	12.1	12.5	
96	11.6	9.4	10.9	11.8	12.3	12.0	13.4	
97	11.4	9.8	10.4	11.6	12.2	12.0	11.0	
98	12.3	10.5	10.6	13.0	13.1	12.8	13.9	
99	12.6	9.1	11.8	13.1	13.3	13.0	14.2	
00	12.9	10.1	12.0	12.9	14.0	13.1	12.8	
01	12.9	12.6	12.1	13.0	13.5	13.0	9.9	
02	12.5	10.9	11.9	12.4	13.1	12.7	12.3	

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A47 Singleton Large-for-Gestational-Age Births by Residence and Facility RHA, Alberta, 1988 - 2002*

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	173	253	239	240	222	242	255	223	253	231	274	253	290	237	251
2	113	124	115	110	117	99	100	141	121	123	119	120	141	142	143
3	1,120	1,082	1,179	1,097	1,116	1,014	1,078	1,087	1,062	1,034	1,186	1,270	1,329	1,317	1,316
4	399	373	388	395	461	420	391	381	419	367	443	445	460	518	483
5	162	151	138	128	139	140	120	112	123	117	125	104	102	111	118
6	1,370	1,374	1,383	1,417	1,518	1,387	1,289	1,279	1,288	1,217	1,310	1,362	1,327	1,332	1,376
7	302	286	332	321	364	317	317	273	343	298	356	339	338	348	364
8	199	211	196	198	228	219	239	231	239	205	217	225	226	305	258
9	142	154	152	133	184	125	145	151	165	155	138	158	170	188	179
Unknown											1	1			
Alberta	**3,980**	**4,008**	**4,122**	**4,039**	**4,349**	**3,963**	**3,934**	**3,878**	**4,013**	**3,747**	**4,169**	**4,277**	**4,383**	**4,498**	**4,488**
Facility															
1	183	259	246	244	227	242	261	239	251	239	280	255	299	253	270
2	100	116	110	102	109	98	96	131	117	113	115	120	135	124	131
3	1,135	1,090	1,187	1,108	1,112	1,012	1,078	1,087	1,074	1,041	1,197	1,268	1,331	1,327	1,304
4	353	332	352	359	431	384	372	362	386	338	410	421	433	473	450
5	135	122	101	100	106	111	98	89	96	87	85	73	69	87	85
6	1,524	1,548	1,547	1,574	1,719	1,563	1,444	1,408	1,439	1,368	1,481	1,530	1,474	1,523	1,575
7	237	213	252	247	262	237	233	198	254	226	268	256	269	247	255
8	186	184	190	186	213	204	226	227	241	195	210	210	219	288	250
9	127	144	137	119	170	112	126	137	155	140	123	144	154	176	168
Alberta	**3,980**	**4,008**	**4,122**	**4,039**	**4,349**	**3,963**	**3,934**	**3,878**	**4,013**	**3,747**	**4,169**	**4,277**	**4,383**	**4,498**	**4,488**

Table A48 High Birth Weight Births (≥4,000 grams) by Residence and Facility RHA, Alberta, 1988 - 2002*

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	213	264	260	246	279	281	277	240	257	231	290	283	318	269	286
2	151	160	149	131	142	135	126	179	151	155	142	150	171	162	173
3	1,264	1,337	1,377	1,335	1,352	1,238	1,298	1,310	1,252	1,241	1,381	1,456	1,427	1,414	1,387
4	475	491	492	500	525	522	479	431	444	438	507	509	487	553	509
5	188	167	148	154	139	160	131	123	134	129	135	115	115	110	123
6	1,426	1,532	1,532	1,517	1,470	1,455	1,370	1,371	1,301	1,254	1,364	1,430	1,363	1,371	1,395
7	359	338	392	357	420	396	376	309	382	329	400	378	369	367	387
8	228	247	234	263	254	264	273	250	275	239	266	278	262	337	300
9	136	167	161	153	185	154	163	159	168	160	147	164	201	212	210
Unknown											1	1		1	
Alberta	**4,440**	**4,703**	**4,745**	**4,656**	**4,766**	**4,605**	**4,493**	**4,372**	**4,364**	**4,176**	**4,633**	**4,764**	**4,713**	**4,796**	**4,770**
Facility															
1	223	275	266	247	288	290	285	259	260	241	297	282	324	283	302
2	139	150	145	128	133	129	123	168	147	149	140	150	167	146	165
3	1,269	1,341	1,380	1,343	1,339	1,231	1,296	1,314	1,261	1,245	1,381	1,459	1,433	1,422	1,379
4	432	453	457	467	502	501	462	417	419	421	486	488	467	520	485
5	170	145	121	129	117	132	110	108	106	105	103	95	81	92	83
6	1,571	1,684	1,690	1,666	1,650	1,625	1,515	1,481	1,434	1,362	1,525	1,575	1,493	1,530	1,578
7	292	267	312	286	321	299	284	233	302	269	307	296	305	276	294
8	221	228	227	251	247	256	268	249	273	237	262	262	259	325	284
9	123	160	147	139	169	142	150	143	162	147	132	157	184	202	200
Alberta	**4,440**	**4,703**	**4,745**	**4,656**	**4,766**	**4,605**	**4,493**	**4,372**	**4,364**	**4,176**	**4,633**	**4,764**	**4,713**	**4,796**	**4,770**

*Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

*Notes: RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A49 Singleton and Multiple Preterm Birth Rates, Alberta, 1988 - 2002

Year	Total Live Singleton Births	Live Singleton Preterm Births	Singleton Preterm Birth Rate[1]	Total live multiple births	Live Multiple Preterm Births	Multiple Preterm Birth Rate[2]
88	40,840	2,406	5.9	829	451	54.4
89	42,059	2,402	5.7	920	428	46.5
90	41,755	2,487	6.0	878	469	53.4
91	41,490	2,391	5.8	879	420	47.8
92	40,712	2,357	5.8	961	462	48.1
93	39,037	2,262	5.8	868	385	44.4
94	38,584	2,252	5.8	875	422	48.2
95	37,629	2,211	5.9	900	495	55.0
96	36,585	2,258	6.2	887	511	57.6
97	35,611	2,141	6.0	939	514	54.7
98	36,514	2,272	6.2	1,015	543	53.5
99	36,738	2,389	6.5	1,040	547	52.6
00	35,518	2,478	7.0	1,107	620	56.0
01	36,077	2,484	6.9	1,149	624	54.3
02	37,057	2,597	7.0	1,225	698	57.0

Source: Vital Statistics, Birth File, Department of Government Services, January 2004.

Notes:
1. Singleton preterm birth rate is per 100 live singleton births.
2. Multiple preterm birth rate is per 100 live multiple births.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A50 Preterm Births and Rates by Plurality and Small-for-Gestational-Age Status, Alberta, 1988 - 2002

Year	Singleton Preterm Births						Multiple Preterm Births					
	SGA			Non-SGA			SGA			Non-SGA		
	Preterm Cases	Live Births	Preterm Rate[1]	Preterm Cases	Live Births	Preterm Rate[1]	Preterm Cases	Live Births	Preterm Rate[1]	Preterm Cases	Live Births	Preterm Rate[1]
88	263	4,310	6.1	2,143	36,530	5.9	37	81	45.7	414	748	55.3
89	241	4,454	5.4	2,161	37,605	5.7	41	109	37.6	387	811	47.7
90	264	4,353	6.1	2,223	37,402	5.9	61	92	66.3	408	786	51.9
91	299	4,275	7.0	2,092	37,215	5.6	38	89	42.7	382	790	48.4
92	224	3,973	5.6	2,133	36,739	5.8	46	90	51.1	416	871	47.8
93	243	3,818	6.4	2,019	35,219	5.7	37	74	50.0	348	794	43.8
94	228	3,659	6.2	2,024	34,925	5.8	43	90	47.8	379	785	48.3
95	251	3,723	6.7	1,960	33,906	5.8	52	88	59.1	443	812	54.6
96	235	3,360	7.0	2,023	33,225	6.1	61	93	65.6	450	794	56.7
97	235	3,355	7.0	1,906	32,256	5.9	42	67	62.7	472	872	54.1
98	238	3,307	7.2	2,034	33,207	6.1	60	95	63.2	483	920	52.5
99	244	3,034	8.0	2,145	33,704	6.4	42	81	51.9	505	959	52.7
00	227	2,812	8.1	2,251	32,706	6.9	58	96	60.4	562	1,011	55.6
01	239	2,824	8.5	2,245	33,253	6.8	56	91	61.5	568	1,058	53.7
02	245	2,803	8.7	2,352	34,254	6.9	66	107	61.7	632	1,118	56.5

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:
1. Preterm rate = Preterm Cases/Live Births, in a given category.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A51. Preterm (<37 weeks gestation) Live Births and Preterm Live Birth Rate by Maternal Age Group, Alberta, 1988 – 2002

Year	Total	Maternal Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Live Births								
88	2,857	245	684	1,036	645	219	28	0
89	2,830	268	632	998	691	204	37	0
90	2,956	253	652	1,006	774	245	26	0
91	2,811	280	611	901	723	257	39	0
92	2,819	243	597	905	767	267	39	1
93	2,647	242	573	794	702	298	37	1
94	2,674	236	551	819	721	311	36	0
95	2,706	243	563	802	720	337	41	0
96	2,769	221	543	814	780	360	51	0
97	2,655	217	501	798	705	359	74	1
98	2,815	241	545	801	755	410	62	1
99	2,936	193	614	832	821	398	77	1
00	3,098	215	576	870	865	474	98	0
01	3,108	193	616	892	838	475	94	0
02	3,295	203	711	936	933	432	80	0
Preterm Birth Rate (per 100 Live Births)								
88	6.9	8.1	7.0	6.5	6.5	8.4	8.1	
89	6.6	8.5	6.5	6.2	6.4	7.0	11.3	
90	6.9	7.7	7.0	6.5	7.1	7.6	7.2	
91	6.6	8.2	6.6	6.1	6.6	7.4	9.6	
92	6.8	7.4	6.7	6.4	6.7	7.5	9.2	
93	6.6	8.0	6.6	6.0	6.4	8.2	8.3	
94	6.8	7.8	6.7	6.3	6.6	8.2	7.3	
95	7.0	8.1	7.0	6.6	6.7	8.6	8.5	
96	7.4	8.1	7.2	6.9	7.4	8.6	8.8	
97	7.3	8.5	6.8	6.8	7.0	8.5	11.0	
98	7.5	9.2	7.1	6.8	7.2	9.5	9.3	
99	7.8	7.4	7.8	7.1	8.0	8.6	10.0	
00	8.5	8.8	7.7	7.7	8.6	10.3	12.5	
01	8.3	8.3	8.2	7.8	8.0	10.3	11.6	
02	8.6	9.2	9.1	7.9	8.6	9.2	9.7	

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A52 Preterm (<37 weeks gestation) Live Births by Residence and Facility RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	147	162	197	167	125	160	151	145	142	131	130	143	149	142	135
2	82	72	91	70	63	60	65	73	69	69	98	77	79	88	93
3	907	876	1011	886	869	856	876	907	910	917	994	1045	1131	1126	1242
4	238	264	249	261	250	245	235	270	274	246	229	257	257	278	299
5	98	114	77	93	75	84	69	79	69	56	70	59	84	82	84
6	982	965	973	991	1065	895	918	860	927	875	920	952	1019	986	1023
7	193	183	184	188	180	154	185	174	182	163	176	199	187	192	206
8	122	121	108	97	127	107	104	131	122	116	116	121	112	141	123
9	88	73	66	58	65	86	71	67	74	82	81	83	80	73	90
Unknown											1				
Alberta	**2,857**	**2,830**	**2,956**	**2,811**	**2,819**	**2,647**	**2,674**	**2,706**	**2,769**	**2,655**	**2,815**	**2,936**	**3,098**	**3,108**	**3,295**
Facility															
1	145	164	205	163	116	156	152	143	139	124	133	130	138	131	128
2	67	49	64	49	51	47	52	61	51	58	77	56	56	63	64
3	934	905	1,064	933	908	907	903	956	953	968	1042	1114	1215	1195	1320
4	173	177	156	190	168	154	164	166	195	154	155	175	176	177	189
5	31	33	27	43	23	21	33	25	24	12	22	13	17	14	20
6	1,294	1,334	1,257	1,237	1,350	1,198	1,184	1,126	1,206	1,168	1212	1253	1299	1345	1378
7	81	69	81	97	82	56	75	82	62	54	56	63	68	63	60
8	71	49	61	59	78	56	62	97	91	69	61	82	78	79	90
9	61	50	41	40	43	52	49	50	48	48	57	50	51	41	46
Alberta	**2,857**	**2,830**	**2,956**	**2,811**	**2,819**	**2,647**	**2,674**	**2,706**	**2,769**	**2,655**	**2,815**	**2,936**	**3,098**	**3,108**	**3,295**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A53 Twin, Triplet and Quadruplet Live Births and Percent of Multiple Births, Alberta, 1988 - 2002

Year	Total	Twins	Triplets	Quadruplets	%Twins	%Triplets	%Quadruplets
88	**829**	803	18	8	96.9	2.2	1.0
89	**920**	901	19	0	97.9	2.1	0.0
90	**878**	851	27	0	96.9	3.1	0.0
91	**879**	868	11	0	98.7	1.3	0.0
92	**961**	922	39	0	95.9	4.1	0.0
93	**868**	841	23	4	96.9	2.6	0.5
94	**875**	854	21	0	97.6	2.4	0.0
95	**900**	875	25	0	97.2	2.8	0.0
96	**887**	861	26	0	97.1	2.9	0.0
97	**939**	882	57	0	93.9	6.1	0.0
98	**1,015**	978	33	4	96.4	3.3	0.4
99	**1,040**	1008	32	0	96.9	3.1	0.0
00	**1,107**	1,060	47	0	95.8	4.2	0.0
01	**1,149**	1,100	45	4	95.7	3.9	0.3
02	**1,225**	1,191	30	4	97.2	2.4	0.3

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A54 Live Multiple Births and Live Multiple Birth Rate by Maternal Age Group, Alberta, 1988 - 2002

Year	Total	Maternal Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Live Multiple Births[1]								
88	**829**	36	155	319	241	70	8	0
89	**920**	48	138	351	279	95	9	0
90	**878**	29	147	321	301	74	6	0
91	**879**	37	148	338	263	85	8	0
92	**961**	36	171	348	313	86	7	0
93	**868**	29	193	287	249	100	10	0
94	**875**	36	139	294	297	106	3	0
95	**900**	37	167	282	277	131	6	0
96	**887**	44	150	271	289	119	14	0
97	**939**	24	137	271	312	171	24	0
98	**1,015**	29	129	299	364	166	28	0
99	**1,040**	28	140	280	388	175	29	0
00	**1,107**	36	159	313	346	215	38	0
01	**1,149**	38	175	296	381	220	39	0
02	**1,225**	32	193	311	430	225	34	0
Live Multiple Birth Rate (per 100 Live Births)								
88	**2.0**	1.2	1.6	2.0	2.4	2.7		
89	**2.1**	1.5	1.4	2.2	2.6	3.2		
90	**2.1**	0.9	1.6	2.1	2.8	2.3		
91	**2.1**	1.1	1.6	2.3	2.4	2.5		
92	**2.3**	1.1	1.9	2.5	2.8	2.4		
93	**2.2**	1.0	2.2	2.2	2.3	2.8		
94	**2.2**	1.2	1.7	2.3	2.7	2.8		
95	**2.3**	1.2	2.1	2.3	2.6	3.3		
96	**2.4**	1.6	2.0	2.3	2.7	2.9		
97	**2.6**	0.9	1.9	2.3	3.1	4.0	3.6	
98	**2.7**	1.1	1.7	2.6	3.5	3.8	4.2	
99	**2.8**	1.1	1.8	2.4	3.8	3.8	3.8	
00	**3.0**	1.5	2.1	2.8	3.4	4.7	4.9	
01	**3.1**	1.6	2.3	2.6	3.6	4.8	4.8	
02	**3.2**	1.4	2.5	2.6	3.9	4.8	4.1	

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes: 1. Multiple birth refers to birth in which more than one infant is born.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A55 Multiple Pregnancies, Multiple Births and Perinatal Deaths of Multiple Births, Alberta, 1982 - 2002

Year	Total Mothers Delivered	Multiple Pregnancies (MP)				Multiple Births (MB)			Perinatal Deaths of Multiple Births[1]	
		Twins	Triplets	Quads	MP Rate[2]	Total Births	Total MB[3]	MB Rate[4]	Cases	Rate
82	44,601	432	11	2	1.0	45,300	905	2.0	52	57.5
83	45,023	419	5	0	0.9	45,770	853	1.9	41	48.1
84	43,546	416	3	0	1.0	44,235	841	1.9	49	58.3
85	43,425	429	5	0	1.0	43,945	873	2.0	40	45.8
86	43,495	407	7	0	1.0	43,853	835	1.9	49	58.7
87	41,861	448	4	0	1.1	42,356	908	2.1	48	52.9
88	42,040	401	6	2	1.0	42,486	828	1.9	53	64.0
89	42,819	463	7	0	1.1	43,446	947	2.2	49	51.7
90	42,949	446	9	0	1.1	43,463	919	2.1	66	71.8
91	42,581	464	6	0	1.1	43,154	946	2.2	46	48.6
92	41,693	474	16	0	1.2	42,323	996	2.4	52	52.2
93	40,075	442	11	1	1.1	40,653	921	2.3	48	52.1
94	39,723	456	8	0	1.2	40,241	936	2.3	44	47.0
95	38,359	459	10	0	1.2	38,979	948	2.4	56	59.1
96	37,524	456	10	0	1.2	38,088	942	2.5	47	49.9
97	36,514	464	28	0	1.3	36,974	1,012	2.7	44	43.5
98	37,608	495	16	2	1.4	38,149	1,046	2.7	30	28.7
99	38,034	516	13	1	1.4	38,594	1,054	2.7	58	55.0
00	36,745	510	21	2	1.5	37,395	1,028	2.7	41	39.9
01	37,412	541	16	1	1.5	37,963	1,090	2.9	29	26.6
02	38,449	510	12	1	1.4	38,987	1,052	2.7	62	58.9

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes:

1. Perinatal Death Rate of Multiple Births = Perinatal Deaths of Multiple Births / Total Number of Mutiple Births x 1,000.
2. MP Rate = (Total multiple pregnancies/Total mothers delivered) x 100
3. Total MB includes births in which there was a fetal death of another fetus prior to 20 weeks gestation.
4. MB Rate = (Total multiple births/Total mothers delivered) x 100

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A56 Multiple Live Births by Residence and Facility RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	50	46	70	42	32	44	52	51	42	49	34	64	74	67	62
2	36	22	20	24	22	25	18	29	23	25	27	36	47	43	41
3	257	307	310	301	316	292	274	299	334	350	390	373	390	454	470
4	77	97	93	109	114	81	98	104	106	90	101	104	96	98	140
5	33	45	26	22	18	35	25	33	12	26	14	36	34	31	22
6	254	292	259	268	319	273	301	272	266	285	313	295	338	323	321
7	60	44	30	45	78	69	50	54	53	55	56	59	59	66	60
8	43	43	36	50	47	28	42	36	33	23	53	53	34	47	61
9	19	24	34	18	15	21	15	22	18	36	27	20	35	20	48
Alberta	**829**	**920**	**878**	**879**	**961**	**868**	**875**	**900**	**887**	**939**	**1,015**	**1,040**	**1,107**	**1,149**	**1,225**
Facility															
1	47	50	68	42	38	43	56	50	48	53	38	63	68	63	60
2	35	18	19	22	20	23	16	28	15	23	21	30	36	29	26
3	268	316	327	317	316	306	283	317	348	354	404	401	425	489	514
4	53	60	58	71	86	56	66	64	72	59	71	68	74	64	87
5	8	16	4	14	4	12	9	6	2	2	2	8	6		2
6	366	402	338	351	435	365	380	379	368	393	411	404	437	446	433
7	14	20	16	14	19	24	20	8	6	10	16	16	12	16	11
8	28	24	28	44	33	22	35	32	18	27	32	38	32	30	60
9	10	14	20	4	10	17	10	16	10	18	20	12	17	12	32
Alberta	**829**	**920**	**878**	**879**	**961**	**868**	**875**	**900**	**887**	**939**	**1,015**	**1,040**	**1,107**	**1,149**	**1,225**

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Note: RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A57 Multiple Pregnancies, Multiple Births and Perinatal Deaths of Multiple Births by Facility RHA and Hospitals, Alberta, 2001

Place of Birth	Total Mothers Delivered	Multiple Pregnancy Rate[2]	Multiple Pregnancies[3]			Babies[4]			Perinatal Deaths for Multiple Births	
			Twins	Triplets	Other	Twins	Triplets	Other	Cases[5]	Rate[6]
RHA Hospitals										
1	2,009	1.7	33	1	0	66	3	0	3	43.5
2	1,202	1.2	14	1	0	28	3	0	3	96.8
3	12,901	2.0	247	7	1	464	21	4	15	30.7
4	3,178	0.9	29	0	0	58	0	0	0	0.0
5	630	0.0	0	0	0	0	0	0	0	0.0
6	12,312	1.6	191	7	0	368	21	0	7	18.0
7	1,820	0.3	6	0	0	12	0	0	0	0.0
8	1,786	0.9	16	0	0	32	0	0	0	0.0
9	1,169	0.3	3	0	0	6	0	0	0	0.0
Out-of-Hospital'	405	0.5	2	0	0	4	0	0	1	250.0
Alberta	**37,412**	**1.5**	**541**	**16**	**1**	**1,038**	**48**	**4**	**29**	**26.6**

Sources: Statistics reported to the Reproductive Care Committee by Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness, and validated with the hospitals.

Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:
1. Out-of-hospital data from Vital Statistics.
2. Multiple Pregnancy Rate = Total Multiple Pregnancies / Total Mothers Delivered x 100.
3. Includes pregnancies with a fetal loss and retention of one or more fetus.
4. Excludes pregnancies with a fetal loss and retention of one or more fetus.
5. Excludes fetal death of one or more multiples prior to 20 weeks gestation.
6. Perinatal Death Rate (Multiple Births) = Number of Perinatal Deaths (Multiple Births) / Total Number of Multiple Births x 1,000.

RHA boundaries are current as of April 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A58 Multiple Pregnancies, Multiple Births and Perinatal Deaths of Multiple Births by Facility RHA and Hospitals, Alberta, 2002

Place of Birth	Total Mothers Delivered	Multiple Pregnancy Rate[2]	Multiple Pregnancies[3]			Babies[4]			Perinatal Deaths for Multiple Births	
			Twins	Triplets	Other	Twins	Triplets	Other	Cases[5]	Rate[6]
RHA Hospitals										
1	2,033	1.3	26	0	0	51	0	0	0	0.0
2	1,182	1.1	13	0	0	26	0	0	0	0.0
3	13,421	1.6	206	7	1	408	21	4	24	55.4
4	3,264	1.1	35	2	0	70	6	0	5	65.8
5	622	0.2	1	0	0	2	0	0	2	1000.0
6	12,740	1.6	206	3	0	412	6	0	27	64.6
7	1,780	0.3	6	0	0	12	0	0	2	166.7
8	1,814	0.4	7	0	0	14	0	0	2	142.9
9	1,193	0.8	9	0	0	18	0	0	0	0.0
Out-of-Hospital'	400	0.3	1	0	0	2	0	0	0	0.0
Alberta	**38,449**	**1.4**	**510**	**12**	**1**	**1,015**	**33**	**4**	**62**	**58.9**

Sources: Statistics reported to the Reproductive Care Committee by Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness, and validated with the hospitals.

Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:
1. Out-of-hospital data from Vital Statistics.
2. Multiple Pregnancy Rate = Total Multiple Pregnancies / Total Mothers Delivered x 100.
3. Includes pregnancies with a fetal loss and retention of one or more fetus.
4. Excludes pregnancies with a fetal loss and retention of one or more fetus.
5. Excludes fetal death of one or more multiples prior to 20 weeks gestation.
6. Perinatal Death Rate (Multiple Births) = Number of Perinatal Deaths (Multiple Births) / Total Number of Multiple Births x 1,000.

RHA boundaries are current as of April 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A59 Number and Rate (per 1,000 Total Births) of Selected Congenital Anomalies, Alberta, 1988 - 2002

Year	Total Births[1]	All Anomalies[2]		Neural Tube Defects[4]		Heart Septal[5]		Down Syndrome[6]	
		Cases	Rate[3]	Cases	Rate[3]	Cases	Rate[3]	Cases	Rate[3]
88	41,966	1,874	44.7	41	0.98	334	7.96	39	0.93
89	43,233	1,933	44.7	38	0.88	269	6.22	45	1.04
90	42,929	1,985	46.2	31	0.72	323	7.52	53	1.23
91	42,679	1,780	41.7	36	0.84	287	6.72	53	1.24
92	41,952	1,775	42.3	34	0.81	270	6.44	37	0.88
93	40,172	1,469	36.6	29	0.72	252	6.27	46	1.15
94	39,725	1,409	35.5	30	0.76	234	5.89	44	1.11
95	38,791	1,179	30.4	39	1.01	206	5.31	50	1.29
96	37,708	1,141	30.3	24	0.64	220	5.83	32	0.85
97	36,799	1,079	29.3	38	1.03	212	5.76	56	1.52
98	37,721	1,140	30.2	30	0.80	198	5.25	72	1.91
99	38,045	1,168	30.7	27	0.71	207	5.44	65	1.71
00	36,862	1,249	33.9	25	0.68	198	5.37	65	1.76
01	37,461	1,342	35.8	26	0.69	222	5.93	71	1.90
02	38,531	1,306	33.9	22	0.57	242	6.28	66	1.71

Source: Alberta Congenital Anomalies Surveillance System, February 2004 release.

Notes:

1. Total Births = Live Births + Stillbirths
2. Includes all congenital anomalies in and outside ICD-9 Chapter XIV. The number of patients was counted; one patient could belong to more than one diagnostic category of defects.
3. Per 1,000 total births in each age group.
4. ICD-9 diagnostic codes 740.0-742.0.
5. ICD-9 diagnostic codes 745.0-745.9.
6. ICD-9 diagnostic code 758.0.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions dates of data extraction, and improvement in the data quality.

Table A60 Selected Congenital Anomalies and Rates (per 1,000 live births) by Maternal Age Group, Alberta, 1988 - 2002 Combined

Maternal Age Group (Years)	Live Births	All Anomalies[1]		Neural Tube Defects[3]		Heart Septal[4]		Down Syndrome[5]	
		Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]
< 20	42,729	1,545	36.2	26	0.61	228	5.34	22	0.51
20-24	125,146	4,249	34.0	82	0.66	580	4.63	68	0.54
25-29	196,303	6,901	35.2	93	0.47	922	4.70	152	0.77
30-34	159,631	5,743	36.0	79	0.49	811	5.08	206	1.29
35-39	58,445	2,258	38.6	26	0.44	353	6.04	146	2.50
≥40	8,405	388	46.2	3	0.36	62	7.38	61	7.26
Unknown	19	48		1		10		2	
Total	**590,678**	**21,132**	**35.8**	**310**	**0.52**	**2,966**	**5.02**	**657**	**1.11**

Source: Alberta Congenital Anomalies Surveillance System, February 2004 release.

Notes:

1. Includes all congenital anomalies in and outside ICD-9 Chapter XIV. The number of patients was counted; one patient could belong to more than one diagnostic category of defects.
2. Per 1,000 live births in each age group.
3. ICD-9 diagnostic codes 740.0-742.0.
4. ICD-9 diagnostic codes 745.0-745.9.
5. ICD-9 diagnostic code 758.0.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction, and improvement in data quality.

Table A61 Selected Congenital Anomalies and Rates (per 1,000 live births) by Birth Weight Group, Alberta, 1988 - 2002 Combined

Birth Weight (grams)	Live Births	All Anomalies[1]		Neural Tube Defects[3]		Heart Septal[4]		Down Syndrome[5]	
		Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]	Cases	Rate[2]
< 1000	2,699	528	195.6	27	10.00	58	21.49	26	9.63
1000-1499	3,046	565	185.5	17	5.58	70	22.98	11	3.61
1500-2499	29,481	2,338	79.3	61	2.07	495	16.79	145	4.92
2500-4499	545,044	17,364	31.9	200	0.37	2,283	4.19	473	0.87
≥4500	10,396	331	31.8	5	0.48	59	5.68	2	0.19
Unknown	12	6		6		1		1	
Total	**590,678**	**21,132**	**35.8**	**316**	**0.53**	**2,966**	**5.02**	**658**	**1.11**

Source: Alberta Congenital Anomalies Surveillance System, February 2004 release.

Notes:

1. Includes all congenital anomalies in and outside ICD-9 Chapter XIV. The number of patients was counted; one patient could belong to more than one diagnostic category of defects.
2. Per 1,000 live births in each age group.
3. ICD-9 diagnostic codes 740.0-742.0.
4. ICD-9 diagnostic codes 745.0-745.9.
5. ICD-9 diagnostic code 758.0.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction, and improvement in data quality.

Table A62 Multiple and Singleton Stillbirth Rates, Alberta, 1988 - 2002

Year	Multiple Births[1]				Singleton Births			
	Live Births	Stillbirths	Total Births	Stillbirth Rate[2]	Live births	Stillbirths	Total Births	Stillbirth Rate[2]
88	829	30	859	34.9	40,840	267	41,107	6.5
89	920	16	936	17.1	42,059	238	42,297	5.6
90	878	26	904	28.8	41,755	270	42,025	6.4
91	879	24	903	26.6	41,490	286	41,776	6.8
92	961	19	980	19.4	40,712	260	40,972	6.3
93	868	27	895	30.2	39,037	240	39,277	6.1
94	875	16	891	18.0	38,584	250	38,834	6.4
95	900	25	925	27.0	37,629	237	37,866	6.3
96	887	20	907	22.1	36,585	216	36,801	5.9
97	939	19	958	19.8	35,611	230	35,841	6.4
98	1,015	12	1,027	11.7	36,514	177	36,691	4.8
99	1,040	24	1,064	22.6	36,738	242	36,980	6.5
00	1,107	20	1,127	17.7	35,518	217	35,735	6.1
01	1,149	18	1,167	15.4	36,077	217	36,294	6.0
02	1,225	22	1,247	17.6	37,057	227	37,284	6.1

Source: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.

Notes: 1. Multiple birth refers to birth in which more than one infant is born.
2. Stillbirth rates are per 1,000 total births.
Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A63 Stillbirths by weeks of gestation, Alberta, 1988 - 2002

Year	Stillbirths	Number of weeks gestation							
		<37		37-42		>42		Unknown	
		Cases	% of stillbirths	Cases	% of stillbirths	Cases	% of stillbirths	Cases	% of stillbirths
88	297	210	70.7	86	29.0	0	0.0	1	0.3
89	254	182	71.7	72	28.3	0	0.0	0	0.0
90	296	222	75.0	74	25.0	0	0.0	0	0.0
91	310	234	75.5	75	24.2	1	0.3	0	0.0
92	279	205	73.5	72	25.8	0	0.0	2	0.7
93	267	175	65.5	91	34.1	0	0.0	1	0.4
94	266	189	71.1	77	28.9	0	0.0	0	0.0
95	262	200	76.3	61	23.3	1	0.4	0	0.0
96	236	172	72.9	64	27.1	0	0.0	0	0.0
97	249	189	75.9	60	24.1	0	0.0	0	0.0
98	190	145	76.3	45	23.7	0	0.0	0	0.0
99	266	195	73.3	71	26.7	0	0.0	0	0.0
00	237	179	75.5	58	24.5	0	0.0	0	0.0
01	235	174	74.0	61	26.0	0	0.0	0	0.0
02	249	197	79.1	51	20.5	1	0.4	0	0.0

Sources: Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.
Notes: Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A64 Stillbirths and Stillbirth Rates by Maternal Age Group, Alberta, 1988 - 2002

Year	Total	Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Stillbirths								
88	297	36	67	114	61	17	2	0
89	254	20	46	96	64	25	3	0
90	296	24	76	87	73	31	5	0
91	310	27	86	85	78	29	5	0
92	279	29	70	80	63	34	3	0
93	267	26	56	79	70	33	3	0
94	266	24	54	68	77	35	8	0
95	262	27	46	77	72	34	6	0
96	236	21	41	70	60	38	6	0
97	249	16	51	77	56	45	4	0
98	190	21	32	53	53	25	6	0
99	266	20	51	79	66	39	11	0
00	237	20	44	66	67	29	11	0
01	235	19	46	51	63	41	15	0
02	249	21	45	60	68	42	13	0
Stillbirths (per 1,000 Total Births)								
88	7.1	11.7	6.8	7.1	6.1	6.4		
89	5.9	6.3	4.7	5.9	5.9	8.5		
90	6.9	7.2	8.1	5.6	6.7	9.5		
91	7.3	7.8	9.2	5.7	7.0	8.3		
92	6.7	8.8	7.8	5.6	5.5	9.5		
93	6.6	8.5	6.4	5.9	6.3	9.0		
94	6.7	7.8	6.5	5.2	7.0	9.1		
95	6.8	8.9	5.7	6.3	6.6	8.6		
96	6.3	7.7	5.4	5.9	5.6	9.0		
97	6.8	6.2	6.9	6.5	5.5	10.5		
98	5.0	8.0	4.1	4.5	5.0	5.7		
99	7.0	7.6	6.4	6.7	6.4	8.4		
00	6.4	8.1	5.9	5.8	6.6	6.2		
01	6.3	8.1	6.1	4.4	6.0	8.8		
02	6.5	9.4	5.7	5.0	6.2	8.8		

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.

Notes: Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A65 Stillbirths by Birth Weight Categories, Alberta, 1988 - 2002

Year	Birth Weight (Grams)					
	<500	<1000	<1500	<2500	≥4000	≥4500
Stillbirths						
88	73	150	177	217	3	1
89	56	115	137	181	2	1
90	68	136	166	219	4	0
91	101	156	188	240	4	0
92	75	119	150	208	3	1
93	68	121	145	186	8	1
94	61	120	140	188	3	1
95	85	131	151	201	6	4
96	69	116	134	173	7	3
97	72	133	153	191	6	3
98	72	105	116	144	7	2
99	90	138	159	197	7	3
00	74	132	145	169	11	5
01	60	116	135	172	6	2
02	77	136	157	193	6	4
Percentage of Stillbirths						
88	24.6	50.5	59.6	73.1	1.0	0.3
89	22.0	45.3	53.9	71.3	0.8	0.4
90	23.0	45.9	56.1	74.0	1.4	0.0
91	32.6	50.3	60.6	77.4	1.3	0.0
92	26.9	42.7	53.8	74.6	1.1	0.4
93	25.5	45.3	54.3	69.7	3.0	0.4
94	22.9	45.1	52.6	70.7	1.1	0.4
95	32.4	50.0	57.6	76.7	2.3	1.5
96	29.2	49.2	56.8	73.3	3.0	1.3
97	28.9	53.4	61.4	76.7	2.4	1.2
98	37.9	55.3	61.1	75.8	3.7	1.1
99	33.8	51.9	59.8	74.1	2.6	1.1
00	31.2	55.7	61.2	71.3	4.6	2.1
01	25.5	49.4	57.4	73.2	2.6	0.9
	30.9	54.6	63.1	77.5	2.4	1.6
Rate (per 100 Total Births in Each Weight Category)						
88	100.0	49.5	31.6	8.3		
89	100.0	37.5	25.6	6.7		
90	61.8	43.3	29.9	8.0		
91	78.9	49.7	34.0	9.0		
92	72.1	40.3	28.2	7.9		
93	68.0	44.5	31.6	7.6		
94	59.8	40.3	27.8	7.8		
95	65.9	40.9	28.9	8.0		
96	66.3	38.7	25.7	7.1		
97	67.9	45.5	29.4	7.8		
98	72.7	39.2	24.1	5.8		
99	74.4	42.9	29.8	8.1		
00	61.2	38.3	25.5	7.0		
01	58.3	37.4	24.8	7.1		
02	55.0	37.7	26.0	7.2		

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Stillbirth File, Department of Government Services, January 2004 release.

Notes: Data include Alberta residents only.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A66a Stillbirths by Birth Weight Distribution and Time of Death, Alberta, 2001

Birth Weight (grams)	Antepartum Deaths				Intrapartum Deaths				Stillbirths[2]	Live Births[3]	Ratio[4]
	Prior to Hospital Admission	In Hospital	Total	Total Corrected[1]	Prior to Hospital Admission	In Hospital	Total	Total Corrected[1]			
<500	31	1	32	29	5	25	30	13	62	43	1,442
500 - 749	18	0	18	13	2	15	17	7	35	70	500
750 - 999	13	0	13	11	1	2	3	1	16	81	198
1000 - 1249	8	0	8	7	0	2	2	0	10	92	109
1250 - 1499	10	0	10	8	0	0	0	0	10	124	81
1500 - 1749	7	0	7	7	0	2	2	0	9	177	51
1750 - 1999	10	0	10	8	0	0	0	0	10	274	36
2000 - 2499	18	1	19	17	0	1	1	0	20	1,404	14
2500 - 3999	50	2	52	49	2	4	6	5	58	30,161	2
≥4000	5	0	5	5	0	1	1	1	6	4,796	1
Unknown	0	7	7	1	0	0	0	0	7	2	3,500
Total	170	11	181	155	10	52	62	27	243	37,224	7

Table A66b Stillbirths by Birth Weight Distribution and Time of Death, Alberta, 2002

Birth Weight (grams)	Antepartum Deaths				Intrapartum Deaths				Stillbirths[2]	Live Births[3]	Ratio[4]
	Prior to Hospital Admission	In Hospital	Total	Total Corrected[1]	Prior to Hospital Admission	In Hospital	Total	Total Corrected[1]			
<500	40	4	44	37	4	45	49	25	93	67	1,388
500 - 749	15	1	16	12	0	16	16	7	32	84	381
750 - 999	9	3	12	10	0	6	6	3	18	83	217
1000 - 1249	9	0	9	6	0	1	1	0	10	122	82
1250 - 1499	11	0	11	9	0	0	0	0	11	121	91
1500 - 1749	9	0	9	9	0	2	2	1	11	191	58
1750 - 1999	7	0	7	4	0	0	0	0	7	301	23
2000 - 2499	19	0	19	19	0	3	3	2	22	1,608	14
2500 - 3999	44	0	44	44	0	7	7	6	51	31,343	2
≥4000	3	1	4	4	0	2	2	2	6	4,830	1
Unknown	0	0	0	0	0	4	4	0	4	0	-
Total	166	9	175	154	4	86	90	46	265	38,750	7

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospit

Notes:

1. Major anomalies excluded.
2. Total Antepartum Deaths + Total Intrapartum Deaths.
3. Live births for each weight category from Vital Statistics Annual Review 2002.
4. Ratio: Stillbirths/Live births x 1,000 = (Total Antepartum Deaths + Total Intrapartum Deaths)/Live births x 1,000.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A67a Major Anomalies as Cause of Death, Alberta, 2001

Anomaly Classification	Stillbirths[1]			Early Neonatal Deaths			Late Neonatal Deaths			Total[2]		
	<500g	500 - 999g	>999g	<500g	500 - 999g	>999g	<500g	500 - 999g	>999g	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths
Neural Tube Defects	1	0	1	3	0	1	0	0	0	2	4	0
Other Central Nervous System	2	1	0	0	1	3	0	0	1	3	4	1
Heart	3	2	1	1	0	4	0	0	5	6	5	5
Circulatory System	0	0	0	0	0	0	0	0	0	0	0	0
Respiratory System	1	0	0	0	2	1	0	0	1	2	3	1
Gastrointestinal System	0	0	2	1	0	0	0	0	1	2	1	1
Genital Organs	0	0	0	0	0	0	0	0	0	0	0	0
Urinary System	0	2	3	3	0	1	0	0	1	5	4	1
Musculoskeletal Deformity	2	1	0	3	0	1	0	0	1	3	4	1
Integument	0	0	0	0	0	0	0	0	0	0	0	0
Chromosomal	7	5	7	5	1	7	0	0	3	24	13	3
Other/Unspecified Congenital	4	8	2	2	3	5	0	0	3	14	10	3
Total	**20**	**19**	**16**	**18**	**7**	**23**	**0**	**0**	**16**	**61**	**45**	**16**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: 1. Six stillbirths have no weight documented.

2. Total deaths due to congenital anomalies = 125; total deaths (Stillbirth + Neonatal) = 407.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A67b Major Anomalies as Cause of Death, Alberta, 2002

Anomaly Classification	Stillbirths			Early Neonatal Deaths			Late Neonatal Deaths			Total[1]		
	<500g	500 - 999g	>999g	<500g	500 - 999g	>999g	<500g	500 - 999g	>999g	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths
Neural Tube Defects	3	3	0	0	1	2	0	0	0	6	3	0
Other Central Nervous System	0	2	0	2	2	2	0	0	1	2	6	1
Heart	2	1	2	1	1	6	0	0	1	5	8	1
Circulatory System	0	1	1	0	0	0	0	0	0	2	0	0
Respiratory System	4	0	0	1	0	2	0	0	1	4	3	1
Gastrointestinal System	1	1	0	2	0	0	0	0	1	2	2	1
Genital Organs	0	0	0	0	0	0	0	0	0	0	0	0
Urinary System	2	2	2	5	3	6	0	0	0	6	14	0
Musculoskeletal Deformity	0	0	0	4	0	3	0	0	3	0	7	3
Integument	0	0	0	0	0	0	0	0	0	0	0	0
Chromosomal	17	8	5	6	3	10	0	0	3	30	19	3
Other/Unspecified Congenital	5	0	2	2	2	3	0	0	3	7	7	3
Total	**34**	**18**	**12**	**23**	**12**	**34**	**0**	**0**	**13**	**64**	**69**	**13**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: 1. Total deaths due to congenital anomalies = 146; total deaths (Stillbirth + Neonatal) = 469.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A68 Major Anomalies as Cause of Death, Alberta, 1998 - 2002

Anomaly Classification	Year														
	98			99			00			01			02		
	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]
Neural Tube Defects/ Other Central Nervous System	10	5	4.5	8	5	3.0	9	7	3.9	5	9	3.4	8	10	3.8
Cardio-Respiratory	5	15	6.0	9	19	6.4	6	22	6.8	8	14	5.4	11	13	5.1
Gastrointestinal / Musculoskeletal / Integument	2	7	2.7	8	7	3.4	8	6	3.4	5	7	2.9	2	13	3.2
Genitourinary	2	9	3.3	2	6	1.8	3	1	1.0	5	5	2.5	6	14	4.3
Chromosomal	22	16	11.4	25	22	10.8	19	12	7.6	24	16	9.8	30	22	11.1
Other/Unspecified Congenital	8	8	4.8	13	8	4.8	15	24	9.5	14	13	6.6	7	10	3.6
Total	**49**	**60**	**32.8**	**65**	**67**	**30.3**	**60**	**72**	**32.3**	**61**	**64**	**30.7**	**64**	**82**	**31.1**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: 1. SB = Stillbirths.

2. NND = Neonatal deaths (Early + Late).

3. Total (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths) for specific anomaly / Total deaths for that year (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths) x 100.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A69 Weight Specific Perinatal and Neonatal Mortality, Alberta, 2001

Birth Weight (Grams)	Perinatal					Neonatal				
	Total Births[1]	Perinatal Deaths	Perinatal Deaths Excluding Major Congenital Anomalies	Perinatal Mortality Rate[2]	Corrected Perinatal Mortality Rate[3]	Live Births	Neonatal Deaths	Neonatal Deaths Excluding Major Congenital Anomalies	Neonatal Mortality Rate[4]	Corrected Neonatal Mortality Rate[5]
<500	107	109	70	1,000*	1,000*	47	47	28	1000	1000.0
500 - 749	115	62	43	539.1	447.9	73	37	33	506.8	478.3
750 - 999	104	24	17	230.8	175.3	88	13	10	147.7	117.6
1000 - 1249	108	11	7	101.9	67.3	98	2	0	20.4	0.0
1250 - 1499	136	13	9	95.6	68.2	127	4	2	31.5	16.0
1500 - 1749	192	11	7	57.3	37.2	184	3	1	16.3	5.5
1750 - 1999	290	13	8	44.8	28.1	280	6	1	21.4	3.6
2000 - 2499	1,470	24	17	16.3	11.6	1,450	10	3	6.9	2.1
2500 - 2999	5,504	38	30	6.9	5.5	5,473	12	3	2.2	0.5
3000 - 3999	25,101	45	36	1.8	1.4	25,073	27	12	1.1	0.5
4000 - 4499	4,054	6	6	1.5	1.5	4,050	2	2	0.5	0.5
≥4,500	810	3	3	3.7	3.7	808	1	1	1.2	1.2
Unknown	1	7	1			1	0	0	0.0	0.0
Total	**37,992**	**366**	**254**	**9.6**	**6.7**	**37,752**	**164**	**96**	**4.3**	**2.5**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.
Vital Statistics Annual Review 2001, Alberta Vital Statistics.

Notes:
1. Total births data from Vital Statistics Annual Review 2001.
2. ((Stillbirths + Early Neonatal Deaths) / Total Births) x 1000.
3. (((Stillbirths + Early Neonatal Deaths) - Congenital Anomalies) / (Total Births - Congenital Anomalies)) x 1000.
4. ((Early Neonatal Deaths + Late Neonatal Deaths) / Live Births) x 1000.
5. ((Early Neonatal Deaths + Late Neonatal Deaths - Congenital Anomalies) / (Live Births - Congenital Anomalies)) x 1000.

*There are more deaths than births in this category due to the fact that some live births and stillbirths are inconsistently registered. Total birth numbers are from the Vital Statistics database, in which some births < 500 grams are apparently not registered. The perinatal deaths come from the Medical Records departments, which have the death records for these unregistered births. The rates have consequently been adjusted downward to 1,000 to correct for this fact.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A70 Weight Specific Perinatal and Neonatal Mortality, Alberta, 2002

Birth Weight (Grams)	Perinatal					Neonatal				
	Total Births[1]	Perinatal Deaths	Perinatal Deaths Excluding Major Congenital Anomalies	Perinatal Mortality Rate[2]	Corrected Perinatal Mortality Rate[3]	Live Births	Neonatal Deaths	Neonatal Deaths Excluding Major Congenital Anomalies	Neonatal Mortality Rate[4]	Corrected Neonatal Mortality Rate[5]
<500	160	153	99	956.3	934.0	67	63	40	940	909.1
500 - 749	116	80	60	689.7	625.0	84	55	48	654.8	623.4
750 - 999	101	29	19	287.1	208.8	83	14	9	168.7	115.4
1000 - 1249	132	15	8	113.6	64.0	122	7	4	57.4	33.6
1250 - 1499	132	17	9	128.8	72.6	121	9	2	74.4	17.5
1500 - 1749	202	13	10	64.4	50.3	191	3	0	15.7	0.0
1750 - 1999	308	12	4	39.0	13.3	301	7	0	23.3	0.0
2000 - 2499	1,630	31	23	19.0	14.2	1,608	16	3	10.0	1.9
2500 - 2999	5,733	28	24	4.9	4.2	5,708	6	2	1.1	0.4
3000 - 3999	25,661	39	31	1.5	1.2	25,635	21	11	0.8	0.4
4000 - 4499	4,084	5	4	1.2	1.0	4,082	3	2	0.7	0.5
≥4,500	752	4	4	5.3	5.3	748	0	0	0.0	0.0
Unknown	4	4	0	-	-	0	0	0	-	-
Total	**39,015**	**430**	**295**	**11.0**	**7.6**	**38,750**	**204**	**121**	**5.3**	**3.1**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.
Vital Statistics Annual Review 2002, Alberta Vital Statistics.

Notes:
1. Total births data from Vital Statistics Annual Review 2002.
2. ((Stillbirths + Early Neonatal Deaths) / Total Births) x 1000.
3. (((Stillbirths + Early Neonatal Deaths) - Congenital Anomalies) / (Total Births - Congenital Anomalies)) x 1000.
4. ((Early Neonatal Deaths + Late Neonatal Deaths) / Live Births) x 1000.
5. ((Early Neonatal Deaths + Late Neonatal Deaths - Congenital Anomalies) / (Live Births - Congenital Anomalies)) x 1000.

Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A71 Weight Specific Perinatal and Neonatal Mortality, Alberta, 1998 - 2002 Combined

Birth Weight (Grams)	Perinatal					Neonatal				
	Total Births[1]	Perinatal Deaths	Perinatal Deaths Excluding Major Congenital Anomalies	Perinatal Mortality Rate[2]	Corrected Perinatal Mortality Rate[3]	Live Births[4]	Neonatal Deaths	Neonatal Deaths Excluding Major Congenital Anomalies	Neonatal Mortality Rate[5]	Corrected Neonatal Mortality Rate[6]
<500	602	610	442	1000*	1000*	233	220	160	944.2	924.9
500 - 749	547	348	267	636.2	573.0	375	215	189	573.3	541.5
750 - 999	479	121	85	252.6	191.9	403	59	41	146.4	106.5
1000 - 1249	548	73	44	133.2	84.8	500	35	18	70.0	37.3
1250 - 1499	632	71	41	112.3	68.1	587	31	9	52.8	15.9
1500 - 1749	997	75	51	75.2	52.4	941	22	5	23.4	5.4
1750 - 1999	1,443	77	50	53.4	35.3	1,387	28	3	20.2	2.2
2000 - 2499	7,678	139	89	18.1	11.7	7,593	67	17	8.8	2.3
2500 - 2999	29,368	160	117	5.4	4.0	29,238	58	18	2.0	0.6
3000 - 3999	129,046	222	180	1.7	1.4	128,864	117	55	0.9	0.4
4000 - 4499	19,858	24	22	1.2	1.1	19,843	14	8	0.7	0.4
≥4500	3,520	15	14	4.3	4.0	3,507	2	2	0.6	0.6
Total	**194,718**	**1,935**	**1,402**	**9.9**	**7.2**	**193,471**	**868**	**525**	**4.5**	**2.7**

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.
Vital Statistics Annual Review 1998 - 2002, Alberta Vital Statistics.

Notes:
1. Total births data from Vital Statistics Annual Review 1998 - 2002.
2. ((Perinatal Deaths) / Total Births) x 1000.
3. ((Perinatal Deaths - Congenital Anomalies) / (Total Births - Congenital Anomalies)) x 1000.
4. Data for births ≥500 grams obtained from Vital Statistics Annual Review 1998 - 2002.
5. ((Early Neonatal Death + Late Neonatal Deaths) / Live Births) x 1000.
6. ((Early Neonatal Deaths + Late Neonatal Deaths - Congenital Anomalies) / (Live Births - Congenital Anomalies)) x 1000.

*There are more deaths than births in this category due to the fact that some live births and stillbirths are inconsistently registered. Total birth numbers are from the Vital Statistics database, in which some births < 500 grams are apparently not registered. The perinatal deaths come from the Medical Records departments, which have the death records for these unregistered births. The rates have consequently been adjusted downward to 1,000 to correct for this fact.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A72 Perinatal and Neonatal Mortality Rates by Length of Gestation, Alberta, 2001

Gestational Age (Weeks)	Live Births[1]	% of Total Deaths[2]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (per 1,000 total births)[3,4]	Neonatal Mortality Rate (per 1,000 live births)[4]
<24	70	35.1	74	66	3	972.2	985.7
24	25	4.2	10	4	3	400.0	280.0
25	20	3.7	7	5	3	444.4	400.0
26	49	3.2	6	4	3	181.8	142.9
27	38	2.2	7	2	0	200.0	52.6
28	47	2.2	7	1	1	148.1	42.6
29	61	1.5	5	1	0	90.9	16.4
30	72	2.5	6	3	1	115.4	55.6
31	101	2.0	7	1	0	74.1	9.9
32	159	2.5	7	2	1	54.2	18.9
33	254	2.5	6	2	2	30.8	15.7
34	413	4.7	15	2	2	39.7	9.7
35	619	5.2	15	2	4	26.8	9.7
36	1,283	4.2	10	4	3	10.8	5.5
37	2,360	3.9	12	2	2	5.9	1.7
38	5,646	6.6	18	3	6	3.7	1.6
39	8,475	5.9	15	5	4	2.4	1.1
40	11,625	5.2	7	11	3	1.5	1.2
41	5,944	2.9	9	3	0	2.0	0.5
42	470	0.0	0	0	0	0.0	0.0
>42	15	0.0	0	0	0	0.0	0.0
Unknown	6	0.0	0	0	0	0.0	0.0
Total	**37,752**	**100.0**	**243**	**123**	**41**	**9.6**	**4.3**

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Vital Statistics Annual Review 2001, Alberta Vital Statistics.

Notes:

1. Live births from Vital Statistics Annual Review 2001.
2. Total number of deaths = 407.
3. Total Births = Live births + Stillbirths.
4. Perinatal and neonatal mortality rates are not corrected.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A73 Perinatal and Neonatal Mortality Rates by Length of Gestation, Alberta, 2002

Gestational Age (Weeks)	Live Births[1]	% of Total Deaths[2]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (per 1,000 total births)[3,4]	Neonatal Mortality Rate (per 1,000 live births)[4]
<24	106	44.1	104	97	6	957.1	971.7
24	30	5.3	9	11	5	512.8	533.3
25	25	2.1	7	2	1	281.3	120.0
26	30	3.8	13	4	1	395.3	166.7
27	48	2.3	6	2	3	148.1	104.2
28	53	2.6	8	4	0	196.7	75.5
29	82	2.8	9	3	1	131.9	48.8
30	76	2.3	9	1	1	117.6	26.3
31	104	1.9	4	5	0	83.3	48.1
32	160	3.6	13	2	2	86.7	25.0
33	232	1.7	4	2	2	25.4	17.2
34	429	3.4	9	4	3	29.7	16.3
35	729	2.3	7	4	0	14.9	5.5
36	1,312	2.8	7	5	1	9.1	4.6
37	2,609	3.6	13	2	2	5.7	1.5
38	6,129	4.3	14	4	2	2.9	1.0
39	8,943	3.2	9	1	5	1.1	0.7
40	11,396	4.1	10	6	3	1.4	0.8
41	5,801	2.8	6	6	1	2.1	1.2
42	439	0.6	3	0	0	6.8	0.0
>42	15	0.2	1	0	0	62.5	0.0
Unknown	2	0.0	0	0	0	0.0	0.0
Total	**38,750**	**100.0**	**265**	**165**	**39**	**11.0**	**5.3**

Sources: Vital Statistics Annual Review 2002, Alberta Vital Statistics.
Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes:
1. Live births from Vital Statistics Annual Review 2002.
2. Total number of deaths = 469.
3. Total Births = Live births + Stillbirths.
4. Perinatal and neonatal mortality rates are not corrected.

Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A74 Perinatal and Neonatal Mortality Rates by Length of Gestation, Alberta, 1998 - 2002 Combined

Gestational Age (Weeks)	Live Births[1]	% of Total Deaths[2]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (per 1,000 total births)[3,4]	Neonatal Mortality Rate (per 1,000 live births)[4]
<24	341	35.4	413	323	15	976.1	991.2
24	109	6.1	55	56	18	676.8	678.9
25	135	3.9	43	31	9	415.7	296.3
26	154	2.9	35	22	5	301.6	175.3
27	194	3.1	43	15	7	244.7	113.4
28	240	2.4	37	9	5	166.1	58.3
29	325	2.2	33	11	3	122.9	43.1
30	349	2.1	32	11	2	112.9	37.2
31	469	2.0	27	14	1	82.7	32.0
32	776	3.5	52	20	3	87.0	29.6
33	1,093	2.6	37	11	7	42.5	16.5
34	1,869	3.4	46	18	9	33.4	14.4
35	2,920	3.3	48	17	5	21.9	7.5
36	5,925	3.5	48	20	7	11.4	4.6
37	11,533	4.0	54	18	13	6.2	2.7
38	28,311	5.7	73	28	21	3.6	1.7
39	44,358	5.2	76	17	18	2.1	0.8
40	60,797	5.7	60	43	18	1.7	1.0
41	29,363	2.4	28	15	7	1.5	0.7
42	3,471	0.4	7	1	1	2.3	0.6
>42	115	0.1	2	0	0	17.1	0.0
Total	**192,847**	**100.0**	**1,249**	**700**	**174**	**10.0**	**4.5**

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Vital Statistics Annual Review 1998-2002, Alberta Vital Statistics.

Notes:

1. Live births from Vital Statistics Annual Review 1998-2002, excluding live births <24 weeks.
2. Total number of deaths = 2,123.
3. Total Births = Live births + Stillbirths.
4. Perinatal and neonatal mortality rates are not corrected.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A75a Perinatal and Neonatal Mortality Rates by Maternal Age Group, Alberta, 2001

Maternal Age Group	Live Births[1]	% of Total Births[2]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (PMR)[3]	PMR Corrected for Congenital Anomalies	Neonatal Mortality Rate (NMR)[4]	NMR Corrected for Congenital Anomalies	Mortality Rate[5]	Mortality Rate Corrected for Congenital Anomalies
≤17	706	1.9	8	5	1	18.2	15.4	8.5	7.1	19.6	16.9
18-29	20,602	55.0	112	61	20	8.4	5.7	3.9	2.1	9.3	6.2
30-39	15,107	40.3	108	50	20	10.4	7.3	4.6	3.0	11.7	8.2
≥35	5,426	14.5	57	27	6	15.3	9.5	6.1	3.0	16.4	10.1
≥40	809	2.2	15	7	0	26.7	17.2	8.7	3.7	26.7	17.2
Unknown	2	0.0	0	1	0	-	-	-	-	-	-
Total	37,226	99.4	243	124	41	9.8	6.8	4.4	2.6	10.9	7.5

Sources: Statistics reported to Reproductive Care Committee by Health Records Departments of the hospitals.
Vital Statistics Annual Review, 2001.

Notes:
1. Live births from Vital Statistics Annual Review 2001.
2. % of Total Births = Live Births/(Live Births + Stillbirths).
3. Per 1,000 total births in each age group.
4. Per 1,000 live births in each age group.
5. ((Stillbirths + Neonatal Deaths) / Total Births in each age Group) x 1,000.

Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A75b Perinatal and Neonatal Mortality Rates by Maternal Age Group, Alberta, 2002

Maternal Age Group	Live Births[1]	% of Total Births[2]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (PMR)[3]	PMR Corrected for Congenital Anomalies	Neonatal Mortality Rate (NMR)[4]	NMR Corrected for Congenital Anomalies	Mortality Rate[5]	Mortality Rate Corrected for Congenital Anomalies
≤17	627	1.6	9	1	3	15.7	12.6	6.4	3.2	20.4	14.2
18-29	21,204	55.0	124	101	21	10.5	7.5	5.8	3.5	11.5	8.1
30-39	15,624	40.5	118	59	12	11.2	7.1	4.5	2.5	12.0	7.8
≥35	5,547	14.4	57	20	7	13.7	9.5	4.9	2.5	15.0	10.4
≥40	828	2.1	14	4	3	21.4	20.2	8.5	7.3	24.9	22.6
Unknown	0	0.0	0	0	0	-	-	-	-	-	-
Total	38,283	99.3	265	165	39	11.2	7.7	5.3	3.2	12.2	8.4

Sources: Statistics reported to Reproductive Care Committee by Health Records Departments of the hospitals.
Vital Statistics Annual Review, 2002.

Notes:
1. Live births from Vital Statistics Annual Review 2002.
2. % of Total Births = Live Births/(Live Births + Stillbirths).
3. Per 1,000 total births in each age group.
4. Per 1,000 live births in each age group.
5. ((Stillbirths + Neonatal Deaths) / Total Births in each age Group) x 1,000.

Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A76 Summary of Antepartum Deaths ≥2500 grams, Alberta, 1999 - 2002

Cause of Death	1999		2000		2001		2002	
	Cases	%	Cases	%	Cases	%	Cases	%
Intrauterine Asphyxia - Cause Unknown	31	50.0	23	40.4	29	50.9	19	39.6
Nuchal cord/Knot/Occlusion	19	30.6	17	29.8	12	21.1	14	29.2
Abruptio Placenta/Placenta Previa	6	9.7	7	12.3	8	14.0	8	16.7
Placental Insufficiency	3	4.8	4	7.0	6	10.5	4	8.3
Intrauterine Infection	1	1.6	0	0.0	1	1.8	2	4.2
Congenital Anomaly	2	3.2	3	5.3	0	0.0	0	0.0
Circulatory - Twin to Twin Transfusion, Feto-maternal hemorrhage	0	0.0	3	5.3	1	1.8	1	2.1
Total	**62**	**100.0**	**57**	**100.0**	**57**	**100.0**	**48**	**100.0**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A77 Wigglesworth Classification of Perinatal and Neonatal Deaths, Alberta, 1998 - 2002

Wigglesworth Classification	Year									
	98		99		00		01		02	
	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total
Group 1 - Death before the start of labour.	96	28.7	125	28.7	97	23.7	122	30.0	129	27.5
Group 2 - Lethal or potential lethal malformation.	107	32.0	132	30.3	131	32.0	125	30.7	146	31.1
Group 3 - Deaths associated with prematurity.	74	22.2	98	22.5	109	26.7	88	21.6	132	28.1
Group 4 - Intrapartum Deaths, Neonatal Deaths <4 hours old, Neonatal Deaths >1000grams & >4hours old with evidence of cerebral birth trauma/asphyxia.	12	3.6	26	6.0	19	4.6	21	5.2	18	3.8
Group 5 - Neonate 37+ weeks gestation, stillbirth/neonatal death with defined specific condition.	45	13.5	55	12.6	53	13.0	51	12.5	44	9.4
Total	**334**	100.0	**436**	100.0	**409**	100.0	**407**	100.0	**469**	100.0

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A78 Wigglesworth Classification of Perinatal and Neonatal Deaths, Alberta, 2001

Group Classification	Number of Babies
Group 1 - Deaths before the start of labour	**122**
<37 weeks	85
>36 weeks	37
<1000 grams	40
>999 grams	81
<2500 grams	80
>2499 grams	41
* one baby not weighed in this category	
Subgroup 1.1 - Abruptio placenta	20
Group 2 - Lethal or potentially lethal malformation	**125**
Stillbirths	61
Neonatal Deaths	64
Subgroup 2.1 - Secondary malformation	5
Group 3 - Deaths associated with prematurity	**88**
<1000 grams	88
<1000 gram Stillbirths - Intrapartum	17
<1000 grams Early Neonatal Deaths	56
<1000 grams Late Neonatal Deaths	15
Neonatal Deaths <37 weeks	71
Subgroup 3.1 - Extreme immaturity	70
Group 4 - Intrapartum Deaths, neonatal deaths <4 hours old, neonatal deaths >1000 grams and >4 hours old with evidence of cerebral birth trauma/asphyxia.	**21**
Intrapartum Deaths	10
Neonatal Deaths <4 hours of age	0
Neonatal Deaths >1000 grams >4 hours of age cerebral birth trauma or asphyxia	11
Subgroup 4.1 - Massive antepartum hemorrhage/Abruptio placenta	9
Group 5 - Neonatal 37+ weeks gestation, stillbirths/neonatal death with defined specific conditions.	**51**
Antepartum deaths	33
Intrapartum deaths	0
Neonatal deaths	18
<1000 grams	14
>999 grams	37
<2500 grams	27
>2499 grams	24
Defined Specific Conditions:	
Cord accident/Cord anomaly	25
Inborn error of Metabolism	1
Twin to twin transfusion	6
Specific or unusual infection	3
Fetomaternal Bleed	1
Placental Pathology	2
Birth Trauma	2
Hydrops not associated with malformation	1
Unexpected, Unusual Finding:	
Unexplained death in term newborn	7
Sudden Infant Death Syndrome	2
Endocardiac damage secondary to peripherally inserted central catheter (PICC) line	1

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A79 Wigglesworth Classification of Perinatal and Neonatal Deaths, Alberta, 2002

Group Classification	Number of Babies
Group 1 - Deaths before the start of labour	129
<37 weeks	89
>36 weeks	40
<1000 grams	46
>999 grams	83
<2500 grams	91
>2499 grams	38
Subgroup 1.1 - Abruptio placenta	26
Group 2 - Lethal or potentially lethal malformation	146
Stillbirths	64
Neonatal Deaths	82
Subgroup 2.1 - Secondary malformation	8
Group 3 - Deaths associated with prematurity	132
<1000 grams	128
<1000 gram Stillbirths - Intrapartum	31
<1000 grams Early Neonatal Deaths	84
<1000 grams Late Neonatal Deaths	13
Neonatal Deaths <37 weeks	101
Subgroup 3.1 - Extreme immaturity	113
Group 4 - Intrapartum Deaths, neonatal deaths <4 hours old, neonatal deaths >1000 grams and >4 hours old with evidence of cerebral birth trauma/asphyxia.	18
Intrapartum Deaths	12
Neonatal Deaths <4 hours of age	3
Neonatal Deaths >1000 grams >4 hours of age cerebral birth trauma or asphyxia	3
Subgroup 4.1 - Massive antepartum hemorrhage/Abruptio placenta	7
Group 5 - Neonatal 37+ weeks gestation, stillbirths/neonatal death with defined specific conditions.	44
Antepartum deaths	28
Intrapartum deaths	1
Neonatal deaths	15
<1000 grams	15
>999 grams	29
<2500 grams	19
>2499 grams	25
Defined Specific Conditions:	
Cord accident/Cord anomaly	16
Inborn error of Metabolism	0
Twin to twin transfusion	6
Specific or unusual infection	6
Fetomaternal Bleed	3
Hydrops not associated with malformation	3
Sudden Infant Death Syndrome	3
Unexpected, Unusual Finding:	
Viral Bronchiolitis	1
Septo-Optic Dysplasia	1
Idiopathic Dilated Cardiomyopathy	1
Hemolytic Anemia from ABO Blood Type Incompatibility	1
Hyponatremic Dehydration	1
Drowning - delivered in toilet	1
Thrombotic complications from death of twin	1

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A80 Wigglesworth 1.0 Factors Related to Death Before the Start of Labour, Alberta 1999 - 2002

	1999	2000	2001	2002
Placental Insufficiency	13	20	19	18
Abruptio Placenta / Placenta Previa	35	20	20	28
Cord Accident	15	18	6	10
Maternal Disease - Pregnancy-Induced Hypertension, Diabetes, Chorioamnionitis/Ascending infection	11	8	17	18
Unexplained	51	31	60	55

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Notes: Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A81 Wigglesworth 3.0 Factors Related to Deaths Associated with Prematurity, Alberta, 1999 - 2002

	1999	2000	2001	2002
Abruptio Placenta / Placenta Previa	23	36	18	32
Maternal Disease - Hemolysis, Elevated Liver Enzymes and Low Platelet Count (HELLP), Pregnancy-Induced Hypertension, Diabetes	4	7	3	5
Multiple Pregnancies	14	8	14	36
Incompetent Cervix	12	13	16	13
Infection	11	8	10	18
Preterm Rupture of Membranes	28	32	21	25
Unexplained / No prenatal care	6	5	6	3

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A82 Wigglesworth 4.0 Factors Related to Intrapartum Deaths, Neonatal Deaths <4 Hours Old, Neonatal Deaths >1000 grams and >4 Hours Old with Evidence of Cerebral Birth Trauma/Asphyxia, Alberta, 1999 - 2002

	1999	2000	2001	2002
Placental Insufficiency	1	1	0	0
Abruptio Placenta / Placenta Previa	14	7	8	10
Cord Accident	0	3	0	2
Maternal Disease - Pregnancy-Induced Hypertension, Diabetes	2	4	0	1
Birth Trauma / Delayed Birth	1	2	4	0
Intrauterine Infection	2	0	1	2
Perinatal Aspphyxia - Cause Unknown	6	2	8	3

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A83 Wigglesworth 5.0 Neonatal Deaths ≥37 weeks Gestation, Stillbirths, and Neonatal Deaths with Defined Specific Conditions, Alberta, 1998 - 2002

Defined Specific Conditions/ Unusual Finding	Year				
	98	99	00	01	02
Cord accident/Cord anomaly	15	28	33	25	16
Inborn error of Metabolism	2	1	1	1	0
Twin to twin transfusion	5	7	4	6	6
Specific or unusual infection	4	4	4	2	6
Fetomaternal Bleed	1	0	5	1	3
Placental Pathology	0	0	0	2	0
Trauma-birth or motor vehicle accident	1	1	0	2	0
Hydrops not associated with malformation	0	2	1	1	3
Unexplained death in term newborn	8	6	4	7	0
Sudden Infant Death Syndrome	4	3	0	2	3
Other - bowel perforation, cardiomyopathy, severe maternal anemia, iatrogenic, persistent pulmonary hypertension, meconium aspiration, peritonitis/appendicitis, overlaying of sibling, maternal cardiac arrest, alveolar dysplasia, cocaine related death, bil	5	3	1	2	7

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A84 Perinatal and Neonatal Statistics by Facility RHA, Alberta, 2001

Facility RHA	Total Births ≥500g[1]	Stillbirths ≥500g	Early Neonatal Deaths ≥500g	Late Neonatal Deaths ≥500g	Stillbirth Rate ≥500g[2]	Perinatal Mortality Rate ≥500g[3]	Neonatal Mortality Rate ≥500g[4]	Total Cesarean Section Rate[5]	Primary Cesarean Section Rate[6]	Extremely Low Birth Weight %[7]	Very Low Birth Weight %[8]	Low Birth Weight %[9]
1	2,036	8	2	1	3.9	4.9	1.5	21.5	13.5	0.2	0.6	4.7
2	1,213	3	0	1	2.5	2.5	0.8	16.2	10.8	0.2	0.4	4.5
3	13,106	55	30	17	4.2	6.5	3.6	24.1	16.5	0.6	1.4	7.3
4	3,203	16	4	2	5.0	6.2	1.9	20.0	12.4	0.2	0.5	3.8
5	630	0	2	2	0.0	3.2	6.3	29.5	17.5	0.2	1.0	2.1
6	12,467	63	31	15	5.1	7.5	3.7	22.5	15.1	0.8	1.8	7.7
7	1,823	9	0	1	4.9	4.9	0.6	17.4	11.1	0.0	0.4	2.4
8	1,798	8	1	1	4.4	5.0	1.1	22.0	13.0	0.3	0.7	3.0
9	1,171	8	1	0	6.8	7.7	0.9	22.2	14.2	0.0	0.8	2.1
Alberta	**37,447**	**170**	**71**	**40**	**4.5**	**6.4**	**3.0**	**22.4**	**14.8**	**0.5**	**1.1**	**6.2**

Source: Statistics reported to the Reproductive Care Committee from Canadian Institute of Health Information, Alberta Health and Wellness.

Notes:

1. Out-of-hospital births excluded.
2. (Stillbirths ≥500g / Total Births ≥500g) x 1000.
3. ((Stillbirths ≥500g + Early Neonatal Deaths≥500g) / Total Births ≥500g) x 1000.
4. ((Early + Late Neonatal Deaths≥500g) / Live Births ≥500g) x 1000.
5. (Total Cesarean Sections / Total Mothers Delivered) x 100.
6. (Primary Cesarean Sections / Total Mothers Delivered) x 100.
7. (Live Births < 1000g / All Live Births) x 100.
8. (Live Births < 1500g / All Live Births) x 100.
9. (Live Births < 2500g / All Live Births) x 100.

RHA boundaries are current as of 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A85 Perinatal and Neonatal Statistics by Facility RHA, Alberta, 2002

Facility RHA	Total Births ≥500g[1]	Stillbirths ≥500g	Early Neonatal Deaths ≥500g	Late Neonatal Deaths ≥500g	Stillbirth Rate ≥500g[2]	Perinatal Mortality Rate ≥500g[3]	Neonatal Mortality Rate ≥500g[4]	Total Cesarean Section Rate[5]	Primary Cesarean Section Rate[6]	Extremely Low Birth Weight %[7]	Very Low Birth Weight %[8]	Low Birth Weight %[9]
1	2,056	8	5	3	3.9	6.3	3.9	20.3	12.8	0.3	0.7	4.7
2	1,193	4	3	1	3.4	5.9	3.4	17.5	11.8	0.3	0.4	4.6
3	13,556	44	37	17	3.2	6.0	4.0	24.4	16.4	0.9	1.5	8.0
4	3,298	15	7	2	4.5	6.7	2.7	23.3	15.0	0.2	0.4	4.3
5	622	1	1	0	1.6	3.2	1.6	32.5	19.5	0.3	0.3	2.4
6	12,887	73	39	10	5.7	8.7	3.8	23.3	14.9	0.7	1.7	8.1
7	1,780	4	1	1	2.2	2.8	1.1	19.0	12.9	0.1	0.3	1.8
8	1,820	10	4	1	5.5	7.7	2.8	22.7	14.2	0.3	0.5	3.6
9	1,202	7	3	1	5.8	8.3	3.3	19.0	11.7	0.1	0.1	2.8
Alberta	**38,416**	**166**	**100**	**36**	**4.3**	**6.9**	**3.6**	**23.1**	**15.1**	**0.6**	**1.2**	**6.7**

Source: Statistics reported to the Reproductive Care Committee from Canadian Institute of Health Information, Alberta Health and Wellness.

Notes:

1. Out-of-hospital births excluded.
2. (Stillbirths ≥500g / Total Births ≥500g) x 1000.
3. ((Stillbirths ≥500g + Early Neonatal Deaths≥500g) / Total Births ≥500g) x 1000.
4. ((Early + Late Neonatal Deaths≥500g) / Live Births ≥500g) x 1000.
5. (Total Cesarean Sections / Total Mothers Delivered) x 100.
6. (Primary Cesarean Sections / Total Mothers Delivered) x 100.
7. (Live Births < 1000g / All Live Births) x 100.
8. (Live Births < 1500g / All Live Births) x 100.
9. (Live Births < 2500g / All Live Births) x 100.

RHA boundaries are current as of 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A86 Perinatal and Corrected (for Major Anomalies) Perinatal Mortality Rates by Facility RHA, Alberta, 2001

Place of Birth	Total Births[2] (All weights)	Total Births		Stillbirths				Early Neonatal Deaths				Perinatal Mortality Rate[3,4]		Corrected Perinatal Mortality Rate[5,6]	
						Major Anomalies				Major Anomalies					
		≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g
RHA Hospitals															
1	2,041	2,036	2,029	8	4	1	0	2	2	1	1	4.9	3.0	3.9	2.5
2	1,218	1,213	1,213	3	3	0	0	0	0	0	0	2.5	2.5	2.5	2.5
3	13,150	13,106	13,022	55	38	14	6	30	19	17	15	6.5	4.4	4.1	2.8
4	3,207	3,203	3,194	16	12	2	1	4	2	0	0	6.2	4.4	5.6	4.1
5	630	630	629	0	0	0	0	2	2	0	0	3.2	3.2	3.2	3.2
6	12,510	12,467	12,368	63	42	15	6	31	11	12	7	7.5	4.3	5.4	3.2
7	1,826	1,823	1,823	9	9	0	0	0	0	0	0	4.9	4.9	4.9	4.9
8	1,802	1,798	1,791	8	5	0	0	1	1	1	1	5.0	3.4	4.5	2.8
9	1,171	1,171	1,170	8	7	1	1	1	1	1	1	7.7	6.8	6.0	5.1
Total Hospital Births	**37,555**	**37,447**	**37,239**	**170**	**120**	**33**	**14**	**71**	**38**	**32**	**25**	**6.4**	**4.2**	**4.7**	**3.2**
Out-of-Hospital Births[1]	**408**	**404**	**399**	**4**	**3**	**2**	**2**	**5**	**3**	**0**	**0**	**22.3**	**15.0**	**17.4**	**10.1**
Alberta	**37,963**	**37,851**	**37,638**	**174**	**123**	**35**	**16**	**76**	**41**	**32**	**25**	**6.6**	**4.4**	**4.8**	**3.3**

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals and Canadian Institute of Health Information, Alberta Health and Wellness.

Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:

1. Out-of-hospital births from Vital Statistics.
2. Weights were not recorded for 7 hospital stillbirths.
3. (Stillbirths ≥500g + Early Neonatal Deaths≥500g) / Total Births ≥500g X 1000.
4. (Stillbirths ≥1000g + Early Neonatal Deaths≥1000g) / Total Births ≥1000g X 1000.
5. (Stillbirths ≥500g Corrected + Early Neonatal Deaths≥500g Corrected) / Total Births ≥500g Corrected X 1000.
6. (Stillbirths ≥1000g Corrected + Early Neonatal Deaths≥1000g Corrected) / Total Births ≥1000g Corrected X 1000.

Corrected rates exclude deaths due to major anomalies.

RHA boundaries are current as of 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A87 Perinatal and Corrected (for Major Anomalies) Perinatal Mortality Rates by Facility RHA, Alberta, 2002

Place of Birth	Total Births[1] (All weights)	Total Births		Stillbirths				Early Neonatal Deaths				Perinatal Mortality Rate[2,3]		Corrected Perinatal Mortality Rate[4,5]	
						Major Anomalies				Major Anomalies					
		≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g
RHA Hospitals															
1	2,059	2,056	2,049	8	5	2	1	5	4	4	4	6.3	4.4	3.4	2.0
2	1,194	1,193	1,190	4	3	0	0	3	2	2	2	5.9	4.2	4.2	2.5
3	13,641	13,558	13,458	44	30	6	4	37	14	16	11	6.0	3.3	4.4	2.2
4	3,303	3,298	3,294	15	14	0	0	7	4	4	3	6.7	5.5	5.5	4.6
5	623	622	621	1	1	0	0	1	0	0	0	3.2	1.6	3.2	1.6
6	12,959	12,887	12,796	73	47	16	4	39	16	17	12	8.7	4.9	6.1	3.7
7	1,784	1,780	1,779	4	3	1	0	1	1	0	0	2.8	2.2	2.2	2.2
8	1,822	1,820	1,814	10	9	2	2	4	0	1	0	7.7	5.0	6.1	3.9
9	1,202	1,202	1,199	7	5	3	1	3	2	1	1	8.3	5.8	5.0	4.2
Total Hospital Births	**38,587**	**38,416**	**38,200**	**166**	**117**	**30**	**12**	**100**	**43**	**45**	**33**	**6.9**	**4.2**	**5.0**	**3.0**
Out-of-Hospital Births[1]	**400**	**397**	**394**	**2**	**1**	**0**	**0**	**5**	**3**	**1**	**1**	**17.6**	**10.2**	**15.2**	**7.6**
Alberta	**38,987**	**38,813**	**38,594**	**168**	**118**	**30**	**12**	**105**	**46**	**46**	**34**	**7.0**	**4.2**	**5.1**	**3.1**

Sources: Statistics reported to the Reproductive Care Committee by v Records Departments of the hospitals and Canadian Institute of Health Information, Alberta Health and Wellness.

Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:

1. Out-of-hospital births from Vital Statistics.
2. Weights were not recorded for 4 hospital births.
3. (Stillbirths ≥500g + Early Neonatal Deaths≥500g) / Total Births ≥500g X 1000.
4. (Stillbirths ≥1000g + Early Neonatal Deaths≥1000g) / Total Births ≥1000g X 1000.
5. (Stillbirths ≥500g Corrected + Early Neonatal Deaths≥500g Corrected) / Total Births ≥500g Corrected X 1000.
6. (Stillbirths ≥1000g Corrected + Early Neonatal Deaths≥1000g Corrected) / Total Births ≥1000g Corrected X 1000.

Corrected rates exclude deaths due to major anomalies.

RHA boundaries are current as of 2003.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A88 Perinatal and Neonatal Statistics by Level of Hospital, Alberta, 2001

Hospitals	Total Births ≥500g[1]	Stillbirth Rate ≥500g[2]	Perinatal Mortality Rate ≥500g[3]	Neonatal Mortality Rate ≥500g[4]	Total Cesarean Section Rate[5]	Primary Cesarean Section Rate[6]	Extremely Low Birth Weight %[7]	Very Low Birth Weight %[8]	Low Birth Weight %[9]
Level III									
Royal Alexandra/University of Alberta	4,164	8.2	14.2	9.0	26.5	19.2	2.2	4.9	16.1
Foothills	4,221	6.4	12.1	8.3	23.8	17.3	1.8	3.7	11.3
LEVEL III TOTAL	**8,385**	**7.3**	**13.1**	**8.6**	**25.1**	**18.2**	**2.0**	**4.3**	**13.7**
Level II									
Misericordia	2,631	3.8	4.6	0.8	20.6	12.9	0.1	0.2	3.9
Grey Nuns	3,831	2.3	2.9	1.3	22.7	14.7	0.2	0.2	4.3
Lougheed	4,039	3.0	3.0	0.5	23.1	14.6	0.1	0.3	6.7
Rockyview	4,299	3.5	4.7	1.4	26.5	18.3	0.0	0.1	4.7
Red Deer	1,720	5.8	7.0	2.3	27.2	17.2	0.3	0.5	5.5
Grande Prairie	1,155	1.7	2.6	3.5	24.6	14.9	0.3	0.3	3.5
Lethbridge Reg.	1,622	4.9	5.5	1.2	24.1	15.0	0.3	0.7	5.7
Medicine Hat	905	2.2	2.2	1.1	16.0	11.0	0.3	0.3	5.4
LEVEL II TOTAL	**20,202**	**3.4**	**4.0**	**1.3**	**23.6**	**15.3**	**0.1**	**0.3**	**5.0**
Level I									
North	7,129	4.9	5.6	1.3	17.8	11.0	0.1	0.1	2.0
South	1,731	2.9	5.2	2.3	14.8	9.6	0.1	0.1	1.2
LEVEL I TOTAL	**8,860**	**4.5**	**5.5**	**1.5**	**17.2**	**10.7**	**0.1**	**0.1**	**1.8**
Alberta	**37,447**	**4.5**	**6.4**	**3.0**	**22.4**	**14.8**	**0.5**	**1.1**	**6.2**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes:

1. Out-of-hospital births excluded.
2. (Stillbirths ≥500g / Total Births ≥500g) x 1000.
3. ((Stillbirths ≥500g + Early Neonatal Deaths ≥500g) / Total Births ≥500g) x 1000.
4. ((Early + Late Neonatal Deaths ≥500g) / Live Births ≥500g) x 1000.
5. (Total Cesarean Sections / Total Mothers Delivered) x 100.
6. (Primary Cesarean Sections / Total Mothers Delivered) x 100.
7. (Live Births < 1000g / All Live Births) x 100.
8. (Live Births < 1500g / All Live Births) x 100.
9. (Live Births < 2500g / All Live Births) x 100.

Data include 'out of province' cases.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A89 Perinatal and Neonatal Statistics by Level of Hospital, Alberta, 2002

Hospitals	Total Births ≥500g[1]	Stillbirth Rate ≥500g[2]	Perinatal Mortality Rate ≥500g[3]	Neonatal Mortality Rate ≥500g[4]	Total Cesarean Section Rate[5]	Primary Cesarean Section Rate[6]	Extremely Low Birth Weight %[7]	Very Low Birth Weight %[8]	Low Birth Weight %[9]
Level III									
Royal Alexandra/University of Alberta	4,419	10.0	17.7	9.6	25.5	17.5	2.1	4.8	15.8
Foothills	4,383	5.0	10.5	8.3	24.3	17.3	2.2	3.9	12.3
LEVEL III TOTAL	**8,802**	**7.5**	**14.1**	**8.9**	**24.9**	**17.4**	**2.1**	**4.3**	**14.1**
Level II									
Misericordia	2,426	4.5	4.5	0.4	19.8	11.8	0.0	0.0	4.1
Grey Nuns	4,054	3.0	3.9	1.2	25.6	15.9	0.1	0.2	5.2
Lougheed	4,170	3.6	5.8	2.4	22.2	14.6	0.3	0.6	7.1
Rockyview	4,496	1.6	2.4	1.8	27.5	18.3	0.1	0.2	5.2
Red Deer	1,849	3.2	5.9	3.8	29.9	19.4	0.3	0.5	5.9
Grande Prairie	1,212	5.8	9.1	4.1	24.4	15.4	0.4	0.7	4.6
Lethbridge Reg.	1,669	4.2	7.2	4.2	21.1	13.5	0.4	0.8	5.4
Medicine Hat	904	3.3	6.6	4.4	18.4	12.5	0.2	0.4	5.0
LEVEL II TOTAL	**20,780**	**3.3**	**4.9**	**2.3**	**24.3**	**15.6**	**0.2**	**0.4**	**5.5**
Level I									
North	7,193	3.8	4.7	1.3	18.9	12.0	0.1	0.2	2.2
South	1,641	3.0	3.7	1.2	17.5	9.9	0.4	0.4	2.3
LEVEL I TOTAL	**8,834**	**3.6**	**4.5**	**1.2**	**18.7**	**11.6**	**0.2**	**0.2**	**2.2**
Alberta	**38,416**	**4.3**	**6.9**	**3.6**	**23.1**	**15.1**	**0.6**	**1.2**	**6.7**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes:
1. Out-of-hospital births excluded.
2. (Stillbirths ≥500g / Total Births ≥500g) x 1000.
3. ((Stillbirths ≥500g + Early Neonatal Deaths ≥500g) / Total Births ≥500g) x 1000.
4. ((Early + Late Neonatal Deaths ≥500g) / Live Births ≥500g) x 1000.
5. (Total Cesarean Sections / Total Mothers Delivered) x 100.
6. (Primary Cesarean Sections / Total Mothers Delivered) x 100.
7. (Live Births < 1000g / All Live Births) x 100.
8. (Live Births < 1500g / All Live Births) x 100.
9. (Live Births < 2500g / All Live Births) x 100.

Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A90 Neonatal, Post-neonatal and Infant Mortality Rates, Alberta, 1988 - 2002

Year	Neonatal Deaths[1]	Post-Neonatal Deaths[2]	Infant Deaths[3]	Neonatal Mortality Rate (per 1,000 Live Births)	Post-Neonatal Mortality Rate (per 1,000 Live Births)	Infant Mortality Rate (per 1,000 Live Births)
88	183	157	340	4.4	3.8	8.2
89	181	138	319	4.2	3.2	7.4
90	215	123	338	5.0	2.9	7.9
91	145	138	283	3.4	3.3	6.7
92	194	105	299	4.7	2.5	7.2
93	157	105	262	3.9	2.6	6.6
94	185	105	290	4.7	2.7	7.3
95	187	80	267	4.9	2.1	6.9
96	150	81	231	4.0	2.2	6.2
97	130	50	180	3.6	1.4	4.9
98	104	73	177	2.8	1.9	4.7
99	138	77	215	3.7	2.0	5.7
00	150	89	239	4.1	2.4	6.5
01	144	65	209	3.9	1.7	5.6
02	198	78	276	5.2	2.0	7.2

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Vital Statistics, Death File, Department of Government Services, January 2004 release.

Notes:

1. Neonatal deaths refers to deaths of live born infants less than 28 full days after birth.
2. Post-neonatal deaths refers to deaths of children between 28 full days and one year of age.
3. Infant deaths refers to deaths of children under one year of age.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A91 Causes of Death for Intrapartum and Neonatal Deaths ≥2500 grams (Excluding Congenital Anomalies), Alberta, 1999 - 2002

Cause of death	1999		2000		2001		2002	
	Cases	%	Cases	%	Cases	%	Cases	%
Sudden Infant Death Syndrome	3	12.0	0	0.0	2	8.0	3	12.5
Cord Accident	2	8.0	5	21.7	0	0.0	2	8.3
Intrapartum Hemmorhage	7	28.0	6	26.1	5	20.0	2	8.3
Birth Trauma	1	4.0	1	4.3	5	20.0	0	0.0
Infection	2	8.0	0	0.0	2	8.0	4	16.7
Meconium Aspiration	1	4.0	0	0.0	0	0.0	2	8.3
Severe Pulmonary Hypoplasia	1	4.0	0	0.0	0	0.0	0	0.0
Hydrops - caused by anemia	1	4.0	0	0.0	0	0.0	0	0.0
Septic Shock	0	0.0	1	4.3	0	0.0	2	8.3
Bilirubin encephalitis	0	0.0	1	4.3	0	0.0	0	0.0
Twin to twin transfusion Syndrome	0	0.0	0	0.0	1	4.0	0	0.0
Intrauterine asphyxia of unknown cause	7	28.0	9	39.1	10	40.0	3	12.5
Feto-maternal hemmorhage	0	0.0	0	0.0	0	0.0	3	12.5
Drowning	0	0.0	0	0.0	0	0.0	1	4.2
Idiopathic Cardiomyopathy	0	0.0	0	0.0	0	0.0	1	4.2
Hyponatremic dehydration	0	0.0	0	0.0	0	0.0	1	4.2
Total	**25**	**100.0**	**23**	**100.0**	**25**	**100.0**	**24**	**100.0**

Source: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Notes: Data include 'out of province' cases.
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A92 Neonatal and Corrected (for Major Anomalies) Neonatal Mortality Rates by Facility RHA, Alberta, 2001

Place of Birth	Live Births	Live Births		Early Neonatal Deaths				Late Neonatal Deaths				Neonatal Mortality Rate[2,3]		Corrected Neonatal Mortality Rate[4,5]	
						Major Anomalies				Major Anomalies					
		≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g
RHA Hospitals															
1	2,030	2,028	2,025	2	2	1	1	1	1	1	1	1.5	1.5	0.5	0.5
2	1,213	1,210	1,210	0	0	0	0	1	1	1	1	0.8	0.8	0.0	0.0
3	13,063	13,052	12,984	30	19	17	15	17	11	5	5	3.6	2.3	1.9	0.8
4	3,189	3,187	3,182	4	2	0	0	2	0	0	0	1.9	0.6	1.9	0.6
5	630	630	629	2	2	0	0	2	1	1	1	6.3	4.8	4.8	3.2
6	12,427	12,404	12,326	31	11	12	7	15	9	6	6	3.7	1.6	2.3	0.6
7	1,814	1,814	1,814	0	0	0	0	1	1	0	0	0.6	0.6	0.6	0.6
8	1,791	1,790	1,786	1	1	1	1	1	1	1	1	1.1	1.1	0.0	0.0
9	1,163	1,163	1,163	1	1	1	1	0	0	0	0	0.9	0.9	0.0	0.0
Total Hospital Births	**37,320**	**37,278**	**37,119**	**71**	**38**	**32**	**25**	**40**	**25**	**15**	**15**	**3.0**	**1.7**	**1.7**	**0.6**
Out-of-Hospital Births[1]	**402**	**400**	**396**	**5**	**3**	**0**	**0**	**1**	**1**	**1**	**1**	**15.0**	**10.1**	**12.5**	**7.6**
Alberta	**37,722**	**37,678**	**37,515**	**76**	**41**	**32**	**25**	**41**	**26**	**16**	**16**	**3.1**	**1.8**	**1.8**	**0.7**

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:

1. Out-of-hospital births from Vital Statistics.
2. (Early Neonatal Deaths≥500g + Late Neonatal Deaths≥500g) / Live Births ≥500g X 1000.
3. (Early Neonatal Deaths≥1000g + Late Neonatal Deaths≥1000g) / Live Births ≥1000g X 1000.
4. (Early Neonatal Deaths≥500g Corrected + Late Neonatal Deaths≥500g Corrected) / Live Births ≥500g Corrected X 1000.
5. (Early Neonatal Deaths≥1000g Corrected + Late Neonatal Deaths≥1000g Corrected) / Live Births ≥1000g Corrected X 1000.

Corrected rates exclude deaths due to major anomalies.

RHA boundaries are current as of 2003.

Data include 'out of province' cases

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A93 Neonatal and Corrected (for Major Anomalies) Neonatal Mortality Rates by Facility RHA, Alberta, 2002

Place of Birth	Live Births	Live Births		Early Neonatal Deaths				Late Neonatal Deaths				Neonatal Mortality Rate[2,3]		Corrected Neonatal Mortality Rate[4,5]	
						Major Anomalies				Major Anomalies					
		≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g
RHA Hospitals															
1	2,051	2,048	2,044	5	4	4	4	3	2	0	0	3.9	2.9	2.0	1.0
2	1,190	1,189	1,187	3	2	2	2	1	0	0	0	3.4	1.7	1.7	0.0
3	13,546	13,514	13,428	37	14	16	11	17	13	7	7	4.0	2.0	2.3	0.7
4	3,288	3,283	3,280	7	4	4	3	2	2	0	0	2.7	1.8	1.5	0.9
5	622	621	620	1	0	0	0	0	0	0	0	1.6	0.0	1.6	0.0
6	12,844	12,814	12,749	39	16	17	12	10	7	6	6	3.8	1.8	2.0	0.4
7	1,778	1,776	1,776	1	1	0	0	1	1	0	0	1.1	1.1	1.1	1.1
8	1,811	1,810	1,805	4	0	1	0	1	1	0	0	2.8	0.6	2.2	0.6
9	1,195	1,195	1,194	3	2	1	1	1	0	0	0	3.3	1.7	2.5	0.8
Total Hospital Births	**38,325**	**38,250**	**38,083**	**100**	**43**	**45**	**33**	**36**	**26**	**13**	**13**	**3.6**	**1.8**	**2.0**	**0.6**
Out-of-Hospital Births[1]	**397**	**397**	**393**	**5**	**3**	**1**	**1**	**0**	**1**	**0**	**0**	**12.6**	**10.2**	**10.1**	**7.7**
Alberta	**38,722**	**38,647**	**38,476**	**105**	**46**	**46**	**34**	**36**	**27**	**13**	**13**	**3.6**	**1.9**	**2.1**	**0.7**

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.

Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Notes:

1. Out-of-hospital births from Vital Statistics.
2. (Early Neonatal Deaths ≥500g + Late Neonatal Deaths≥500g) / Live Births ≥500g X 1000.
3. (Early Neonatal Deaths ≥1000g + Late Neonatal Deaths≥1000g) / Live Births ≥1000g X 1000.
4. (Early Neonatal Deaths ≥500g Corrected + Late Neonatal Deaths≥500g Corrected) / Live Births ≥500g Corrected X 1000.
5. (Early Neonatal Deaths ≥1000g Corrected + Late Neonatal Deaths≥1000g Corrected) / Live Births ≥1000g Corrected X 1000.

Corrected rates exclude deaths due to major anomalies.

RHA boundaries are current as of 2003.

Data include 'out of province' cases

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A94 Neonatal, Post-neonatal and Infant Mortality Rates By Residence and Facility RHA, Alberta, 2000 - 2002 combined

RHA	Neonatal Deaths	Post-Neonatal Deaths	Infant Deaths	Live Births	Neonatal Mortality Rate (per 1,000 Live Births)	Post-Neonatal Mortality Rate (per 1,000 Live Births)	Infant Mortality Rate (per 1,000 Live Births)
Residence							
1	28	16	44	5,874	4.8	2.7	7.5
2	17	5	22	3,677	4.6	1.4	6.0
3	154	74	228	39,761	3.9	1.9	5.7
4	46	27	73	10,571	4.4	2.6	6.9
5	17	5	22	2,761	6.2	1.8	8.0
6	150	57	207	33,135	4.5	1.7	6.2
7	38	24	62	7,095	5.4	3.4	8.7
8	22	14	36	5,644	3.9	2.5	6.4
9	20	10	30	3,602	5.6	2.8	8.3
Unknown				13			
Alberta	**492**	**232**	**724**	**112,133**	**4.4**	**2.1**	**6.5**
Facility							
1	14	14	28	6,051	2.3	2.3	4.6
2	8	5	13	3,381	2.4	1.5	3.8
3	180	75	255	40,038	4.5	1.9	6.4
4	20	19	39	9,744	2.1	1.9	4.0
5	6	4	10	1,827	3.3	2.2	5.5
6	240	80	320	37,208	6.5	2.2	8.6
7	7	17	24	5,311	1.3	3.2	4.5
8	9	9	18	5,257	1.7	1.7	3.4
9	8	9	17	3,316	2.4	2.7	5.1
Alberta	**492**	**232**	**724**	**112,133**	**4.4**	**2.1**	**6.5**

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.
Vital Statistics, Death File, Department of Government Services, January 2004 release.

Notes:
1. Neonatal deaths refers to deaths of live born infants less than 28 full days after birth.
2. Post-neonatal deaths refers to deaths of children between 28 full days and one year of age.
3. Infant deaths refers to deaths of children under one year of age.

RHA boundaries are current as of April 2003.

Data include Alberta Residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A95 Infant Mortality Rates by Gender, Alberta, 1988 - 2002

Year	Infant Mortalities[1]		Live Births[2]		Infant Mortality Rate[3]	
	Female	Male	Female	Male	Female	Male
88	142	198	20,535	21,134	6.9	9.4
89	128	190	21,036	21,942	6.1	8.7
90	144	194	20,654	21,979	7.0	8.8
91	129	154	20,755	21,614	6.2	7.1
92	140	159	20,395	21,278	6.9	7.5
93	117	144	19,428	20,476	6.0	7.0
94	123	167	19,110	20,349	6.4	8.2
95	117	150	18,859	19,670	6.2	7.6
96	99	132	18,066	19,406	5.5	6.8
97	77	103	17,808	18,742	4.3	5.5
98	73	104	18,234	19,295	4.0	5.4
99	100	115	18,547	19,231	5.4	6.0
00	100	139	18,009	18,616	5.6	7.5
01	81	128	18,116	19,110	4.5	6.7
02	132	144	18,701	19,581	7.1	7.4

Sources: Vital Statistics, Birth File, Department of Government Services, January 2004 release.

Vital Statistics, Death File, Department of Government Services, January 2004 release.

Notes:

1. Infant deaths refers to deaths of children under one year of age.
2. Live births with unknown gender are excluded from these columns.
3. Rate per 1,000 live births.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A96 Infant Deaths by Residence RHA and Facility RHA, Alberta, 1988 - 2002

RHA	Year														
	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Residence															
1	14	23	16	18	14	13	18	17	14	15	8	11	13	18	13
2	11	12	10	7	8	5	6	8	10	6	11	3	3	8	11
3	92	87	119	75	97	90	87	76	65	47	49	70	70	62	96
4	34	35	31	28	19	37	38	29	26	18	17	23	23	22	28
5	11	5	8	10	13	5	8	10	10	5	4	4	3	5	14
6	117	104	103	105	100	66	90	88	60	61	52	68	79	72	56
7	29	24	20	19	25	23	26	16	16	13	10	20	23	11	28
8	16	20	18	16	12	12	11	14	19	10	10	9	15	6	15
9	16	9	13	5	11	11	6	9	11	5	14	4	10	5	15
Unknown											2	3			
Alberta	**340**	**319**	**338**	**283**	**299**	**262**	**290**	**267**	**231**	**180**	**177**	**215**	**239**	**209**	**276**
Facility															
1	9	18	13	16	10	6	11	11	9	8	4	8	8	10	10
2	5	5	3	2	4	5	5	6	6	2	5	3	1	6	6
3	103	92	124	79	102	101	95	82	75	56	54	75	76	75	104
4	17	19	16	13	9	18	16	13	16	7	12	10	15	7	17
5	5	3	1	5	4	3	2	2	2			2	3	2	5
6	173	158	156	146	143	108	142	134	102	93	87	101	114	98	108
7	11	11	10	8	13	10	14	8	5	6	3	6	9	4	11
8	8	9	8	11	7	7	3	6	8	5	7	7	7	4	7
9	9	4	7	3	7	4	2	5	8	3	4	3	6	3	8
Unknown											1				
Alberta	**340**	**319**	**338**	**283**	**299**	**262**	**290**	**267**	**231**	**180**	**177**	**215**	**239**	**209**	**276**

Source: Vital Statistics, Death File, Department of Government Services, January 2004 release.

Notes: Infant deaths refers to deaths of children under one year of age.

RHA boundaries are current as of April 2003.

Data include Alberta residents only.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A97 Maternal Mortality Rates, Alberta, 1970 - 2002

Year	Maternal Deaths				Rates[1]	
	Total	Direct	Indirect	Unrelated	Overall	Direct
70	11	4	1	6	3.4	1.3
71	13	3	2	8	4.3	1.0
72	10	5	0	5	3.4	1.7
73	17	5	2	10	5.8	1.7
74	5	1	1	3	1.7	0.3
75	6	1	2	3	1.9	0.3
76	4	1	1	2	1.2	0.3
77	9	1	4	4	2.6	0.3
78	5	1	2	2	1.4	0.3
79	9	2	1	6	2.4	0.5
80	3	2	1	0	0.8	0.5
81	8	2	4	2	1.9	0.5
82	9	1	4	4	2.0	0.2
83	8	5	1	2	1.8	1.1
84	5	0	1	4	1.1	0.0
85	8	2	0	6	1.8	0.5
86	7	0	0	7	1.6	0.0
87	7	0	0	7	1.7	0.0
88	13	4	3	6	3.1	0.9
89	7	3	2	2	1.6	0.7
90	6	3	0	3	1.4	0.7
91	5	1	3	1	1.2	0.2
92	6	2	3	1	1.4	0.5
93	4	1	1	2	1.0	0.2
94	3	2	0	1	0.8	0.5
95	4	2	2	0	1.0	0.5
96	6	2	2	2	1.6	0.5
97	1	1	0	0	0.3	0.3
98	8	2	5	1	2.1	0.5
99	1	0	0	1	0.3	0.0
00	0	0	0	0	0.0	0.0
01	4	2	1	1	1.1	0.5
02	6	1	0	5	1.5	0.3

Sources: Statistics reported to the Reproductive Care Committee by Health Records Departments of the hospitals.
Vital Statistics Annual Reviews, Alberta Vital Statistics.
Canadian Perinatal Surveillance System, Maternal Health Study Group.

Notes: 1. Rates are per 10,000 live births.
Data include 'out of province' cases
Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A98 Breastfeeding Upon Discharge Rates, Alberta, 1996 - 2002

Year	Number of Women Delivering	Number Breastfeeding Upon Discharge	% Breastfeeding on Discharge[1]
96	31,402	26,089	83.1
97	31,148	26,186	84.1
98	32,553	27,754	85.3
99	37,658	31,817	84.5
00	36,392	31,504	86.6
01	37,007	32,019	86.5
02	38,049	32,792	86.2

Source: Statistics reported to the Reproductive Care Committee from Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

Notes:
1. Number of women breastfeeding upon discharge / Number of women delivering x 100.
2. Prior to 1999 some hospitals did not report on breastfeeding and therefore were excluded.

Data include 'out of province' cases

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A99 Breastfeeding Upon Discharge Rates by Facility RHA, Alberta, 1999 - 2002

RHA	Year											
	99			00			01			02		
	Number of Women Delivering	Number Breast-feeding Upon Discharge	% Breast-feeding on Discharge[1]	Number of Women Delivering	Number Breast-feeding Upon Discharge	% Breast-feeding on Discharge[1]	Number of Women Delivering	Number Breast-feeding Upon Discharge	% Breast-feeding on Discharge[1]	Number of Women Delivering	Number Breast-feeding Upon Discharge	% Breast-feeding on Discharge[1]
1	2,104	1,821	86.5	1,975	1,753	88.8	2,009	1,766	87.9	2,033	1,797	88.4
2	1,234	988	80.1	1,194	992	83.1	1,202	1,025	85.3	1,182	1,013	85.7
3	12,890	11,484	89.1	12,936	11,715	90.6	12,901	11,748	91.1	13,421	12,126	90.4
4	3,451	2,958	85.7	3,212	2,806	87.4	3,178	2,759	86.8	3,264	2,854	87.4
5	732	608	83.1	673	565	84.0	630	531	84.3	622	533	85.7
6	12,370	10,199	82.4	11,789	9,906	84.0	12,312	10,308	83.7	12,740	10,580	83.0
7	2,075	1,549	74.7	1,872	1,510	80.7	1,820	1,496	82.2	1,780	1,437	80.7
8	1,765	1,414	80.1	1,684	1,424	84.6	1,786	1,498	83.9	1,814	1,524	84.0
9	1,037	796	76.8	1,056	833	78.9	1,169	888	76.0	1,193	928	77.8
Alberta	**37,658**	**31,817**	**84.5**	**36,391**	**31,504**	**86.6**	**37,007**	**32,019**	**86.5**	**38,049**	**32,792**	**86.2**

Source: Statistics reported to the Reproductive Care Committee from Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

Notes:
1. Number of women breastfeeding upon discharge / Number of women delivering x 100.

RHA boundaries are current as of 2003.

Data include 'out of province' cases

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A100 Female Population Aged 15 - 49 by Residence RHA, Alberta, 1988 - 2002

Residence RHA	Year											
	88	89	90	91	92	93	94	95	96	97	98	99
1	34,476	34,453	34,901	35,220	35,519	35,657	35,883	36,153	36,337	36,526	36,667	37,131
2	20,684	20,699	20,913	21,035	21,024	21,137	21,584	21,885	22,277	22,592	23,107	23,680
3	228,966	233,013	238,925	243,307	246,576	248,609	251,204	255,052	259,882	267,189	277,287	286,427
4	62,087	62,631	63,710	64,695	65,778	66,476	66,932	67,656	68,344	69,119	71,016	72,687
5	24,433	24,283	24,176	24,359	24,625	24,741	25,109	25,153	25,250	25,328	25,653	25,734
6	232,294	234,262	238,349	241,493	244,189	246,632	245,131	243,000	242,239	243,425	246,045	250,934
7	39,721	40,123	40,508	40,837	41,439	41,771	42,365	42,789	42,868	43,303	43,988	44,415
8	29,551	29,587	30,150	30,339	30,427	30,180	30,359	31,082	31,753	32,202	32,974	33,656
9	15,118	15,315	15,354	15,624	15,736	15,702	15,565	15,476	15,632	16,424	17,068	17,423
Unknown	84	86	80	56	64	72	46	39	24	39	69	38
Women aged 15-49	**687,414**	**694,452**	**707,066**	**716,965**	**725,377**	**730,977**	**734,178**	**738,285**	**744,606**	**756,147**	**773,874**	**792,125**
Total population	2,491,050	2,526,431	2,578,216	2,617,771	2,653,654	2,677,485	2,694,339	2,713,375	2,741,189	2,791,334	2,852,932	2,923,639

Source: Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Note: Populations are estimated at June 30, as viewed at December 31 of each year.

Data may differ from previously published data due to differences in definitions and dates of data extraction.

Table A101 Female Population by Age Group, Alberta, 1988 - 2002

Residence RHA	Age Group (Years)										
	15-49	10-14	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Live Births											
88	**687,414**	87,594	53,020	38,423	91,443	106,771	128,548	121,388	98,282	80,443	60,539
89	**694,452**	89,170	52,113	38,438	90,551	102,514	126,986	124,072	102,606	84,476	63,247
90	**707,066**	91,282	52,590	37,479	90,069	101,248	124,971	127,304	108,045	89,373	66,056
91	**716,965**	93,608	53,142	36,530	89,672	100,525	121,069	129,253	113,450	93,921	69,075
92	**725,377**	95,831	54,308	36,084	90,392	98,970	116,520	130,649	118,162	95,627	75,057
93	**730,977**	98,825	54,766	36,172	90,938	97,717	111,181	131,026	121,944	98,397	79,774
94	**734,178**	100,880	55,567	36,496	92,063	95,253	106,040	129,354	124,645	102,825	83,998
95	**738,285**	102,724	56,240	37,088	93,328	93,701	102,546	125,921	126,934	107,201	88,654
96	**744,606**	104,617	58,103	37,383	95,486	92,886	101,308	121,346	128,478	112,471	92,631
97	**756,147**	106,030	60,090	38,136	98,226	95,077	101,729	117,541	130,859	117,949	94,766
98	**773,874**	107,129	62,458	39,591	102,049	98,349	104,137	114,605	132,913	123,114	98,707
99	**792,125**	108,785	64,529	40,969	105,498	102,150	105,782	112,708	133,941	127,765	104,281
00	**802,513**	110,086	65,522	42,745	108,267	103,619	106,060	111,050	132,588	131,264	109,665
01	**815,913**	110,821	66,621	44,386	111,007	106,634	106,813	112,047	129,575	133,936	115,901
02	**831,964**	111,927	67,490	45,513	113,003	110,520	109,731	113,471	126,332	137,029	121,878

Source: Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Note: Populations are estimated at June 30, as viewed at December 31 of each year.

Data may differ from previously published data due to differences in definitions and dates of data extraction.